AUGUST 1956

AMERICAN

Cinematographer



In This Issue ...

- Horseback Footage With Stabilizer
- Lighting The Head of the Double Parker
- Shooting With Ansco's New Fast Tungsten Color Film

35¢
FOREIGN

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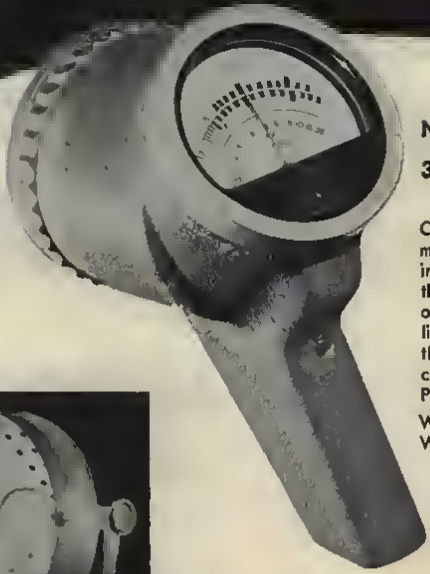
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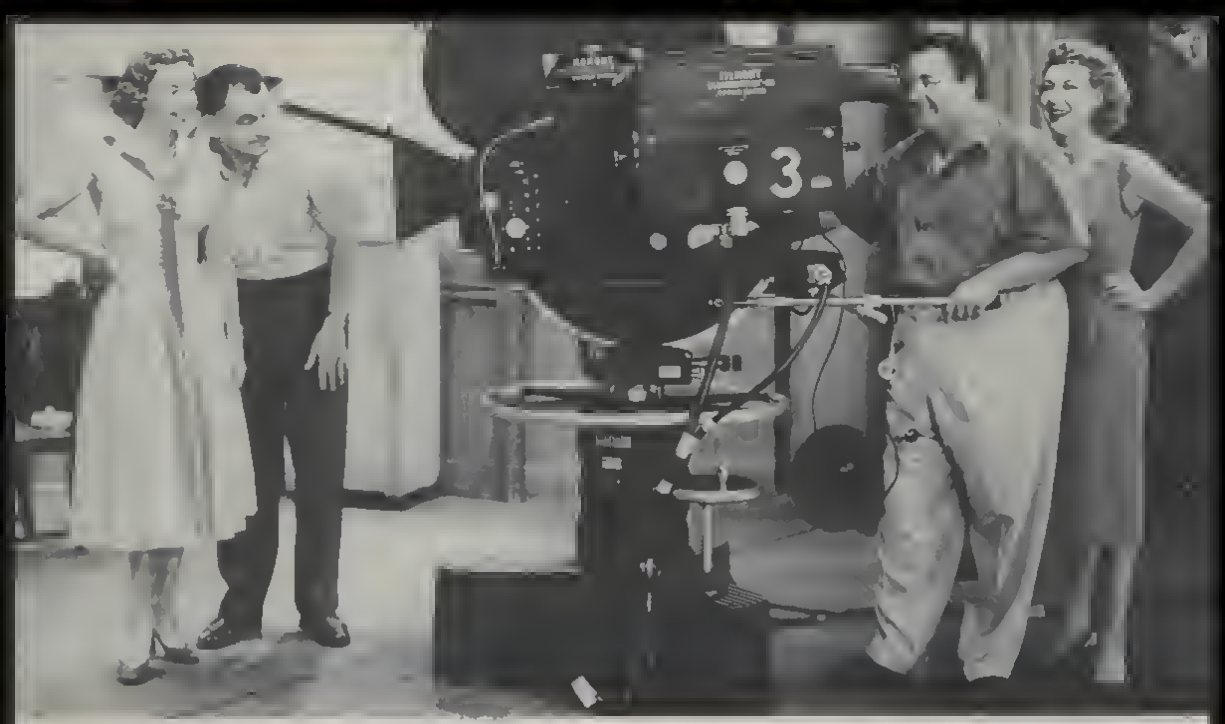
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JACKIE GLEASON'S "HONEYMOONERS" is filmed by Du Mont Electronicam System which incorporates an especially designed and adapted 35mm Mitchell movie camera. Here are Jackie Gleason and Joyce Randolph, right, peering through the camera lens at Audrey Meadows and Art Carney.

NEW ELECTRONICAM REDUCES SHOOTING TIME

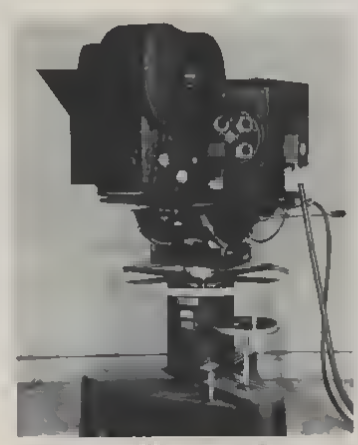
Du Mont's Videa-Film System incarparates both Mitchell 35 mm film camera and TV camera

First to use a video-film system in major TV film production is Jackie Gleason's popular show "The Honeymooners" In going "live on film," Jackie Gleason makes use of the new Du Mont Electronicam System, which combines advanced TV techniques with highest quality 35mm photography.

Heart of the Electronicam System is a completely new type of unit, blending a Du Mont TV camera and a specially adapted Mitchell 35mm camera using a common lens system It gives the producer full advantage of the best techniques of motion picture production while enjoying the time saving and broadened creative scope available in video's electronic practices. Savings in shooting time and costs are substantial

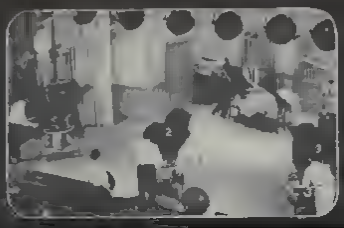
The 35mm Mitchell cameras used as integral parts of the Electronicam System produce consistently superior black and white films, as well as color films which are unequaled for uniformity of quality Mitchell cameras today serve not only in the television industry, but also are the predominant choice in the production of governmental, industrial, research and educational films, as well as being standard equipment for major studios throughout the world.

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Du Mont Electronicam pick-up, Mitchell 35mm film camera on left, TV camera on right

***85% of professional motion pictures shown in theatres throughout the world are filmed with a Mitchell**



Scene from "The Honeymooners" shows Jackie Gleason and Art Carney on set before three pick-up units of Electronicam System. Each pick-up unit has both TV camera and specially designed Mitchell film camera.

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THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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ON THE COVER

DURING REHEARSAL of scene for Regal Films' "Stagecoach To Fury," camera crew on boom overhead lines up camera for most advantageous coverage of action. Photo also shows location of microphone and some of the lamps that were used to illuminate set, simulating daylight. Director of Photography was Walter Strenge, A.S.C., whose story on how picture was photographed begins on page 472 of this issue.—*Photo by Cliff King*

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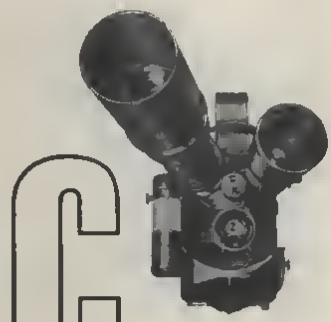
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News briefs about the A S C. its members, and important industry personalities



ART DIRECTOR Ail Ehnen (left) and ASC President George Folsey discussed proposed modernization and refurbishing of the ASC Clubhouse at Society's July meeting



HARRY WILD, ASC, steps to chat with W J. Germon's Harry Pratt at ASC's July dinner-meeting. Others, from left to right are Len Roos, Ernest Miller, and Clark Ramsey. Following the dinner, a print of "Moby Dick" was screened.

The ASC, last month, admitted to Associate Membership in the Society Jack Goetz, of Consolidated Film Industries, Allan Haines, of Pathe Laboratories, Inc., and John J. Kowalak, of Ansco.

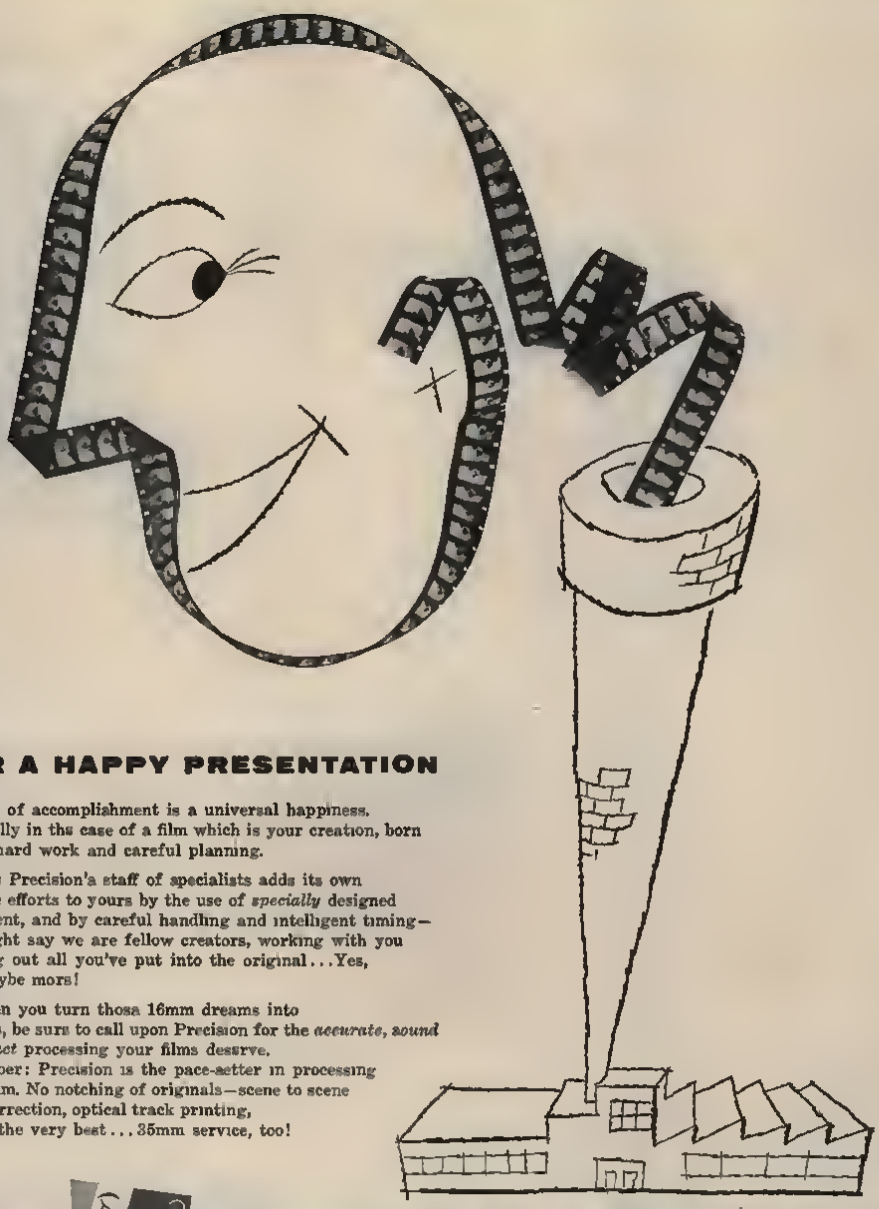
• • •

Frank Zucker, president of Camera Equipment Company, New York, and a member of long standing in the A.S.C., was a Hollywood visitor last month. Annual visit was to renew old friendships and to acquire newly developed motion picture equipment for distribution by his company.

• • •

Arthur Feindel, it turns out, is real monicker of cinematographer "Jockey"

(Continued on Page 456)

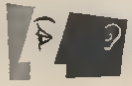


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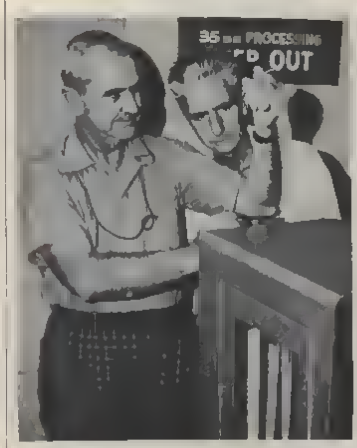
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BULLETIN BOARD

(Continued from Page 454)



BURNETT GUFFEY, ASC, (left) hopes to repeat his Academy Award photography on his current assignment, "End As A Man." Sam Spiegel production is first major production to be filmed entirely in Florida. Here Guffey looks over some footage processed in laboratories of Shamrock Film Studios, Winter Park, Florida, where interiors of "End As A Man" are being shot.

Feindel, who was admitted to membership in the A.S.C. recently

• • •

The Motion Picture Association of America reports that the proportion of color films to all films made in the U. S. during 1955 dropped for the first time since color first became a factor in feature film production

Report shows that there were 154 color features produced last year or 50.5% of a total of 305 pictures that received the Production Code Seal. In 1954, there were 176 color films, or 58.1%—an all-time high for the industry

A major contributing cause to this downward trend has been the successes of such black-and-white films as "On the Waterfront," "From Here to Eternity," and more recently, "Marty."

• • •

Acclaimed finest underwater color cinematography of any motion picture made to date is "The Silent World," photographed over a two year period by Frenchman Jacques-Ives Cousteau, and screened before members of the A. S. C. at the Society's June meeting. Picture demonstrated unusual results obtainable by strobe-lights in underwater cinematography. —END



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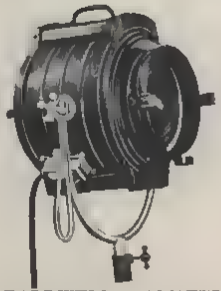
FOR MOTION PICTURE AND TELEVISION PRODUCTION



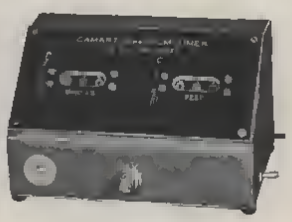
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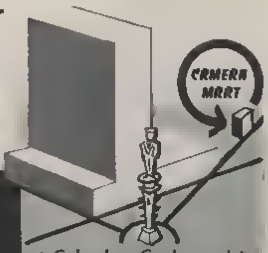
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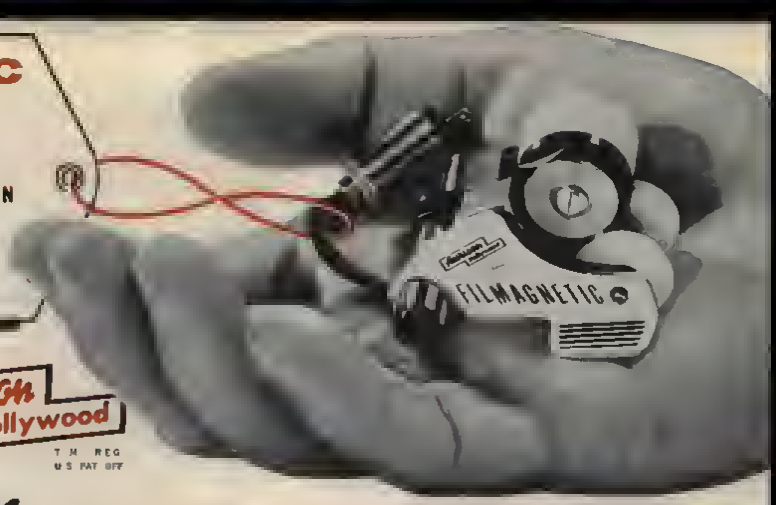
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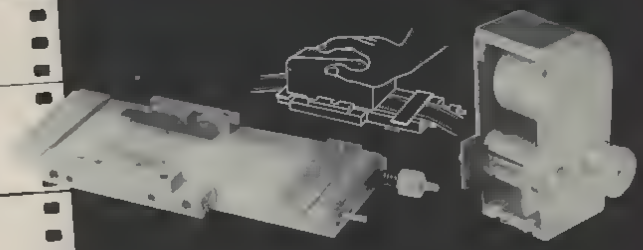
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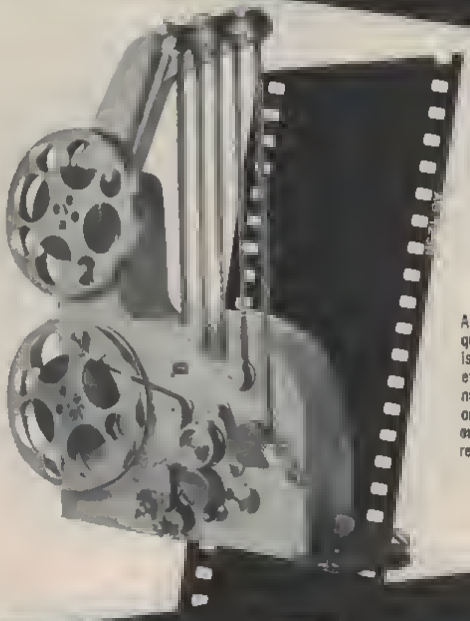


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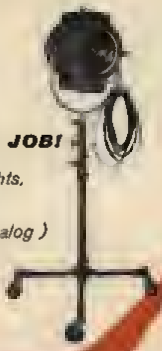
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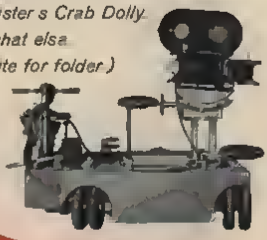
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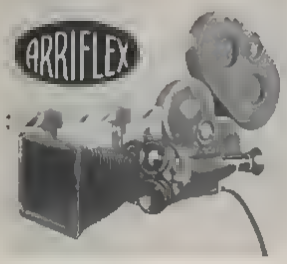
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Photographic Assignments

JULY • 1956

Who, where and what the industry's cameramen were shooting last month.

ALLIED ARTISTS

• HARRY NEUMANN, ASC, "Out of This World," with Huntz Hall and the Bowery Boys. Austen Jewell, director

• WILLIAM CLOTHIER, "Dragoon Wells Massacre," Eastman Color & CinemaScope, with Barry Sullivan and Mona Freeman. Harold Schuster, director

AMERICAN NATIONAL

• CURT FETTERS, "The Man Called X," TV, (Ziv TV) with Barry Sullivan Eddie Davis, director; "Science Fiction Theatre," TV, (Ziv-TV). Herb Strock, director.

• BOB HOFFMAN, "Highway Patrol," TV, Ziv-TV, with Broderick Crawford Lew Landers, director, "Science Fiction Theatre," TV, Ziv TV. Paul Gilfole, director

• MONROE ASKINS, "Science Fiction Theatre," TV, Ziv-TV Eddie Davis, director; "Dr Christian," TV, Ziv-TV, with MacDonald Carey Herb Strock, director.

BILTMORE STUDIOS (New York)

• J. BURGI CONTNER, ASC, "Four Boys and a Gun," (Security Pictures for U.A. release.) William Berke, producer-director.

CALIFORNIA STUDIOS

• FLEET SOUTHCOTT, "Gunsmoke," TV, (Film Center Prod.) with James Arness and Dennis Weaver. Ted Post, director.

• HAL MCALPIN, "O. Henry Playhouse," TV, (Gross Krasne, Inc.) with Thomas Mitchell Peter Godrey and Barney Girard, directors; "Dr. Hudson's Secret Journal," TV, (Wesmor, Inc.) with John Howard. Peter Godfrey, director.

CARTHAY SOUND STAGE

• WILLIAM WHITLEY, ASC, "The Lone Ranger," TV, with Clayton Moore and J Silverheels. Earl Bellamy and Oscar Rudolph, directors.

COLUMBIA

• DESMOND DICKENSON, "Fire Down Below," (Warwick Prod shooting in Trinidad) with Rita Hayworth, Robert Mitchum and Jack Lemmon Robert Parrish, director

• FRED JACKMAN, JR., "Rin-Tin-Tin," TV, (Screen Gems) with Lee Aaker and James Brown Harry Gerstad, director

• BURNETT GUFFEY, ASC, "Bad As a Man," (Horizon-American Prod.) (Shooting in Florida) with Ben Gazzara Jack Garfein, director.

• KIT CARSON, 'The Missing Witness," with Betty Garrett and Phil Carey William Asher, director.

• HENRY FREULICH, ASC "The Phantom Stagecoach," with William Bishop and Kathleen Crowley. Ray Nazarro, director

• WILKIE COOPER, "Seven Waves Away," Copa Prods. shooting in London, with Tyrone Power and Mai Zetterling. Richard Sale, director.

• BENJ KLINE, ASC, Rumble on the Docks," with James Darren and Jerry Janger Fred S Sears, director; "Utah Blaine," with Rory Calhoun and Susan Cummings Fred Sears, director.

• CHARLES LAWTON, ASC, "The Captives," with Randolph Scott. Sam Nelson, director

• GERT ANDERSEN, ASC, "Ford Theatre," TV, Screen Gems. James Sheldon, director

WALT DISNEY

• GORDON AVIL, ASC, "The Mickey Mouse Club," TV. Sid Miller, director

• WALTER CASTLE, ASC, "The Dairy Story," TV. William Beaudine, director

• CHARLES BOYLE, ASC, "Disneyland," TV. William Beaudine, director.

FILMCRAFT STUDIOS

• VIRGIL MILLER, ASC, "You Bet Your Life," TV, Filmcraft Prods., with Groucho Marx Robert Dwan, director

FLYING A

• BILL BRADFORD, ASC, "Buffalo Bill, Jr.," TV, with Dickey Jones and Pappy Cheshire. George Archibaud and Frank MacDonald, directors, "Annie Oakley," TV, with Gale Davis. George Archibaud and Frank MacDonald, directors.

FOX WESTERN AVENUE STUDIOS

• LLOYD AHERN, ASC, 'You Are There," TV, TCF TV. William Russell, director

• KARL STRUSS, ASC, "My Friend Flicka," TV, TCF TV, with Gene Evans and Anita Louise John English, director; G E Theatre, TV, TCF TV Lewis Allen, director, "Broken Arrow," TV, TCF TV, with John Lupton Richard Bare and Alvin Ganzer, directors.

GENERAL SERVICE STUDIOS

• RAY FOSTER, ASC, North American Commercial TV, (Mercury International) T. Gadden, director

GOLDWYN STUDIOS

• GEORGE CLEMENS, ASC, "Schlitz Playhouse of Stars," TV, (Meridian Prods.) Various directors

• NORBERT BRODINE, ASC, "The Loretta Young Show," TV, Lewislor Inc., with Loretta Young. Various directors

• LESTER WHITE, ASC, "Crossroads" TV, Federal Telefilms, Inc J. Addiss, director

(Continued on Page 468)

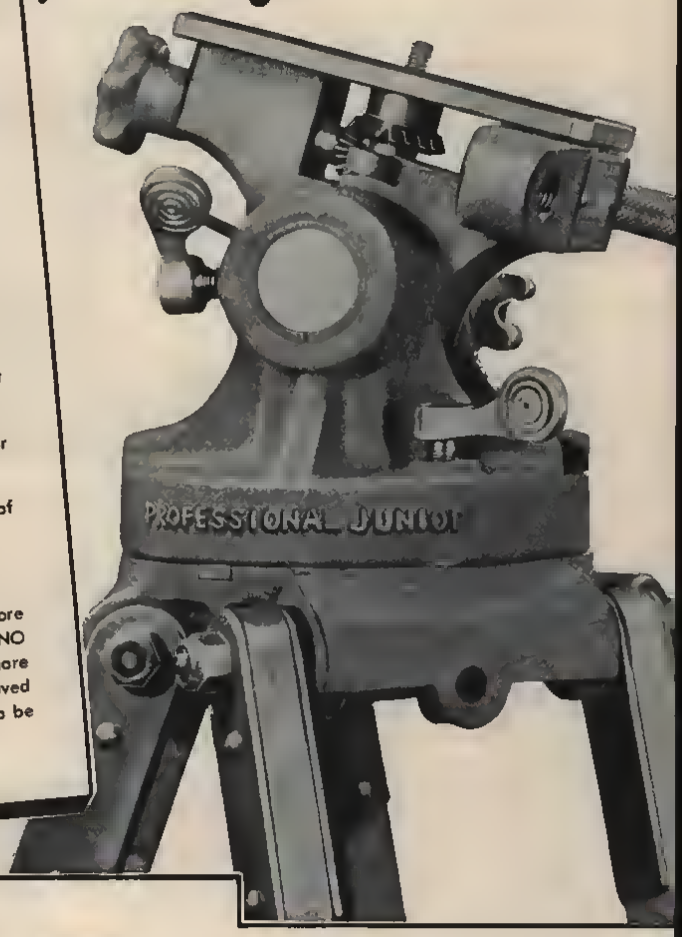
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IMPROVED PROFESSIONAL JUNIOR TRIPOD

Always a great tripod, the new improved PROFESSIONAL JUNIOR with the removable head, now features the following improvements:

1. Simplified camera attaching method with easily accessible knob—no fumbling underneath camera platform—quick, easy, positive.
2. Adjustable telescoping pan handle—make it shorter or longer to suit your needs.
3. Additional pan handle sockets for left, right or reverse tilt.
4. Larger gripping area and sturdier construction of tilt and pan locking levers.
5. New tie-down eyelets in flange.

You'd expect this outstanding tripod to cost a lot more money, but here's the big surprise—THERE IS NO ADVANCE IN PRICE! For better, smoother, more efficient performance—see, test, try the improved PROFESSIONAL JUNIOR today. You won't want to be without it.





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BABY TRIPOD
—for friction and geared Heads
Has substantial shoe and spur
Measures from floor to flange 25" extended—17" collapsed.
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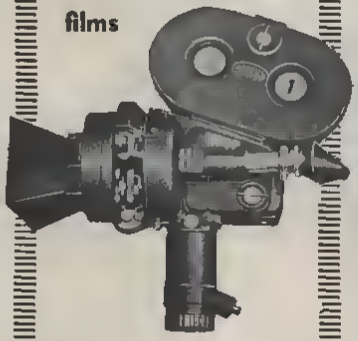
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New 35 mm Model 2A
With 180° Shutter

A TRULY GREAT CAMERA

for TV, Newsreel and commercial films



For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

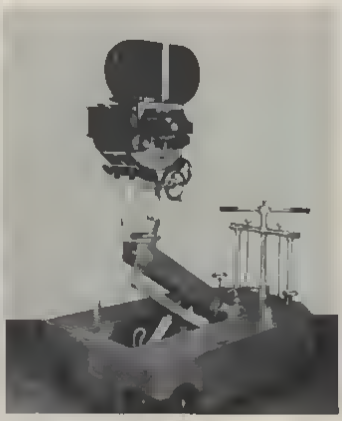
Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200' or 400' magazine. Write for free folder.

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WHAT'S NEW

. . . in equipment, accessories, service



Crab-Hydrolly

National Cine Equipment, Inc., 209 West 48th St., New York 36, N.Y., announces its new Crab-Hydrolly, a fast, all-angle camera dolly featuring a noiseless hydraulic boom arm, easy-rolling dual wheels, and both conventional and "crab" steering.

Boom is actuated by a silent hydraulic system having an accumulator which is loaded manually by a hand pump. Rise and fall of boom is by finger-tip control.

Maximum height to top of mounting head is 48"; minimum height, 21". Length of chassis is 61". Complete details and price may be had from the company.

"Fluid-Action" Heads

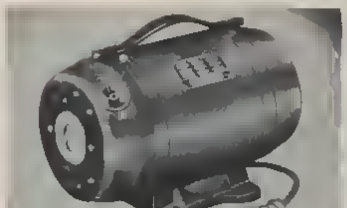
Miller Precision Equipment, Inc., 7305 Melrose Ave., Hollywood 46, Calif., is now manufacturing the first U.S.-produced Miller "Fluid-Action" Tripod Heads. Product features fluid pan control, fluid tilt control, quick camera lock, and an adjustable handle with provision for either left-hand or right-hand use. Pan and tilt movement operates on a semi-hydraulic principle, is fully patented, and is free from shake and judder and backlash.

The Senior-D model is recommended for all cine and professional 16mm cameras. Soon to be announced is a new, heavy-duty model for heavier cameras, plus a line of semi-professional and professional tripods.



New G-E Exposure Meter

General Electric Company announces a new exposure meter having twice the sensitivity of its predecessor. Trade-named the Guardian it features a light-multiplying attachment which increases the meter's sensitivity 64 times for incident light readings and 4 times for reflected-light readings. Exposure values, f/stops, and Polaroid numbers are read directly. List price of meter is $34.50. The Dynacell and incident-light attachments are extra.



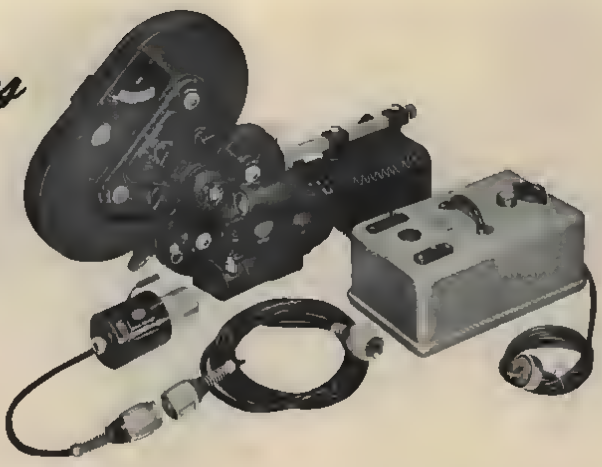
Power Converter

A new 750-watt DC to-AC power converter is announced by Carter Motor Company, 2711 W. George St., Chicago, Ill. Product offers power capacity 50% greater than the largest previous Carter converter. Similar in appearance to the 500-watt converter, it is 1¼" longer and weighs approximately 55 pounds. List price is $246.

(Continued on Page 466)

New Accessories for the

ARRIFLEX 16



400-foot FILM MAGAZINE

SYNCHRONOUS MOTOR

ANIMATION MOTOR

Enthusiastic users everywhere have hailed the Arriflex 16 as the outstanding camera in the 16mm field. Now, with the extra convenience of the 400-foot Film Magazine, the split-second timing of the Synchronous Motor and the added utility of the Animation Motor — it is certainly the most versatile camera, capable of filling every need in the studio or on location.



400-foot FILM MAGAZINE
(shown with motor detached)

A compact, single-compartment, displacement type magazine for 400-foot darkroom loads (on cores) and 200-foot daylight spools.

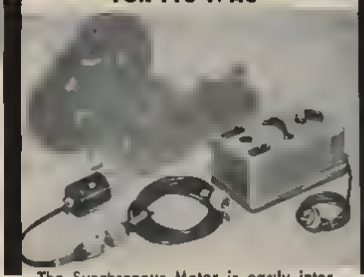
No belts are employed. A Torque Motor — detachable and interchangeable for use with several magazines — drives the take-up through a gear transmission with the correct tension regardless of the amount of film on the take-up spindle.

Operates on 6-8 volts DC, from the power supply used to operate the camera. Electrical contact is made as magazine is attached to camera. The Torque Motor is equipped with a forward-reverse switch. Each magazine has a footage counter — and is numbered for identification.

400-foot FILM MAGAZINE (less Torque Motor) $140.00

Interchangeable Torque Motor only 175.00

SYNCHRONOUS MOTOR FOR 110 V. AC



The Synchronous Motor is easily interchangeable with the Variable Speed Motor, supplied as standard equipment. Unusually light and compact, the Synchronous Motor can be used on the camera for hand-held shooting.

The motor is furnished with its own 110 volt, 60 cycle AC power supply. Output to the camera motor is 42 volts, 60 cycles AC and to the Torque Motor on the magazine (when used) 8 volts DC.

SYNCHRONOUS MOTOR (110 V. AC, 60 cycles—24 frames per second) with power supply and cable $395.00

ANIMATION MOTOR



The Animation Motor features 1/4 second exposures for either single frame, or continuous shooting at 60 frames per minute. A built-on frame counter registers up to 4 digits.

The Animation Motor can be used manually, with a foot switch, relay, or an intervalometer. The unit operates on 110 volts AC, 60 cycles, but can be supplied for operation at other voltages and frequencies on special order.

Complete ANIMATION MOTOR Assembly with Remote Control $595.00

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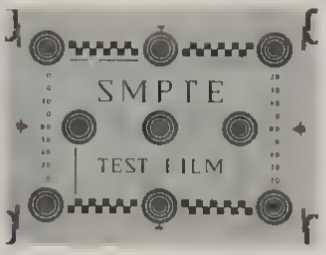
WHAT'S NEW

(Continued from Page 464)



Lens Control Handle

Stevens Engineering Co., 2421 Military Ave., Los Angeles 64, Calif., announces an adjustable lens handle which can be fitted to either the focus or iris control ring of any lens from 1" to 2" in diameter. Purpose is to afford camera operator positive and easier adjustment of lens settings, especially in making follow-focus shots. List price is $3.50.



16mm Test Film

A new 16mm test film that measures registration, aperture size, resolution, shutter timing, centering of image, steadiness of its own test image with respect to the perforation, and also provides a "thousandths scale" for measuring film movement in double-exposure testing of printer steadiness has been announced by the Society of Motion Picture and Television Engineers. Film is said to be ideally suited to needs of manufacturers of 16mm projectors, for film labs to adjust 16mm printers, and for precise alignment of 16mm black-and-white and color TV films. List price is $27.00, and may be had from the Society's headquarters, 55 West 42nd St., New York, N. Y.

NEW F & B "CINEVOICE 400"

F&B's new Cinevoice CONVERSION for 400 ft. magazines . . .

DOES NOT cut down your camera . . .
DOES NOT require an auxiliary motor . . .
CAN STILL be used as the original 100 ft. camera when necessary.



A special needle-bearing take-up system and ball-bearing magazine shafts make possible the superbly smooth, steady and jam-free operation. Either Mitchell or Bell & Howell 400 ft. magazines may be used on F&B conversion and in 10 seconds, the magazine can be removed, the light trap closed, and the Cinevoice is ready for operation as a 100 ft. camera again.

PLUS . . . ALL THESE BUILT-IN FEATURES

1. SILENCED VEEDER footage counter
2. Built in behind the lens filter slot, with two filter holders
3. Headphone jack built in camera
4. Cannon plugs for all sound sockets
5. Tripod socket rebushed with brass insert.
6. New neon signal light

PLUS . . . COMPLETE REFINISHING . . .

Your Cinevoice camera and 400 ft. magazine completely overhauled, cleaned up and re-finished in beautiful, professional black crackle finish.

YET . . . F&B "CINEVOICE 400" IS THE LOWEST PRICED CONVERSION AVAILABLE . .

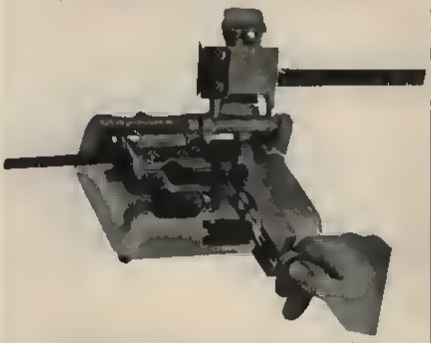
For Complete new outfits . . .
Turret Cinevoice plus F&B conversion and 400 ft. BBH magazine 1200.00

PRICE ONLY $345.00
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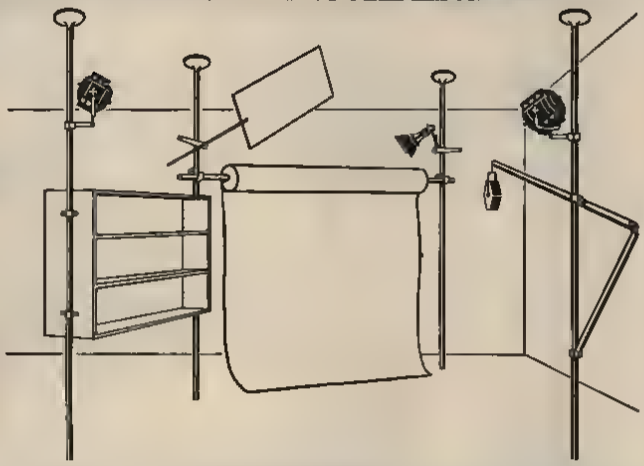


A PERFECT SPLICE EVERY TIME AUTOMATICALLY!

The major couse of film foilures is poor splicing . . . and the mojor cause of poor splicing is improper scroping (either too much or too little). SPLICE-O-FILM solves both of these problems with its outomotic scraper thot lokes off exoctly the right depth of emulsion every time . . . regordless of applied pressure.

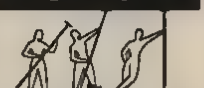
SPLICE-O-FILM is o precision tool . . . imported from Englond. It has a precision-ground, tungsten steel scroper thot is presel ond reody for moking thousonds of splices.

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LIGHTS - PROPS - BACKGROUNDS - MIKES
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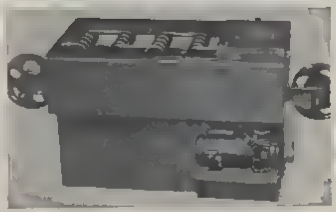
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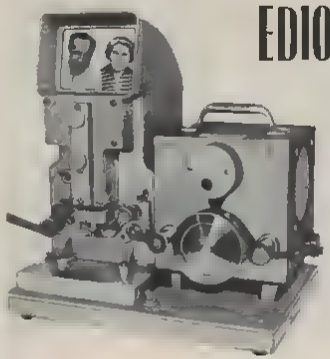
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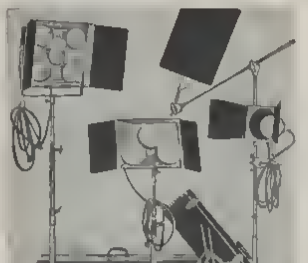
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COLORTRAN replaces heavy cumbersome expensive equipment Ideal for studio and location shots 5000 watts of light from an ordinary household fuse Complete line includes converters spots floods, scoops diffusion frames gator grips stands gobo adapters etc Also in packaged units such as the Groverlite Senior 5000 Kit which includes two Senior Lites with Senior Converter and two stands of chromed steel with column supports to prevent all wover Packed in two metal wood cases that hold all units securely in position with web straps **Complete** **$265**

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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 462)

INDEPENDENTS

● FRANK PLANER, ASC, "The Pride and the Passion," (Technicolor; VistaVision) Stanley Kramer Prod. for UA; shooting in Spain) with Cary Grant and Frank Sinatra Stanley Kramer, producer-director.

● HAROLD LIPSTEIN ASC, "Spring Reunion," (Bryna Prods. UA release) with Betty Hutton and Dana Andrews Robert Pirosh, director

● JAMES WONG HOWE, ASC, "Drango," (Earlmar Prods for UA release) with Jeff Chandler and Joanne Dru Jules Bricken, director.

● WILFRED M CLINE, ASC, "Hidden Fear," (Shooting in Copenhagen) (St. Aubrey Cohn Prods for United Artists release) with John Payne and Natalie Norwick Andre De Toth, producer director

● LEE GARMES, ASC, "The Sharkfighters," (CinemaScope & Color) (Samuel Goldwyn Jr. Prods. UA release) (Shooting in Cuba) with Victor Mature and Karen Steele Jerry Hopper, director

● CHARLES STRAUMER, "The Gun and the Gavel," color and widescreen Albert C Gannaway Prods. shooting in Kanab, with Faron Young and Louis Jean Heydt Albert C Gannaway, producer-director

● ERNEST HALLER, ASC "Men In War," Security Pictures for UA release with Robert Ryan, Aldo Ray and Robert Keith Anthony Mann director

● RAY RENNAHAN, ASC 'The Halliday Brand," Collier Young Prod for US Release, with Joseph Cotten and Viveca Lindfors. Joseph H Lewis, director

● WILLIAM MARGUTIES 'War Drums,' Bel Air Prod for UA release, shooting in Utah, with Lex Barker and Joan Tyler Reginald Le Borg, director

● JOSEPH LA SHELLE, ASC, Showdown Creek," Bob Goldstein Prod for UA release, with John Derek and John Smith Gerd Oswald, director

● FRED WEST, ASC, Runaway Daughters" Golden State Prod for American Int'l release with Merla English and Tom Conway Edward L Cahn, director

● WILLIAM SICKNER, ASC, "The Undead' Roger Corman Prod for American Int'l release, with Pamela Duncan and Richard Garland Roger Corman, producer-director

KEYWEST STUDIOS

● WALTER STRENGE ASC, Family Films, "This is the Life" TV William Claxton, director

KTTV

● STUART THOMPSON, ASC, "Lassie," TV, (Robert Maxwell Prods.) with Jan Clayton and George Cleveland Les Selander, director

● KENNETH PEACH ASC 'Fury,' TV, with Peter Graves and William Fawcett Sidney Salkow, director

• MACK STENGLER, ASC, "Captain Grief," TV, Guild Films. Stuart Hiesler, director.

METRO-GOLDWYN-MAYER

• ROBERT SURTEES, ASC, "Raintree County," (65mm and Color) with Montgomery Clift and Elizabeth Taylor Edward Dmytryk, director.

• JOHN ALTON, "Teahouse of the August Moon," (Color, CinemaScope) with Marlan Brando and Glenn Ford Daniel Mann, director

• ARTHUR E. ARLING, ASC, "The Great American Pastime," with Tom Ewell and Anne Francis. Hermann Hoffmann, director

• HAROLD MARZORATI, ASC, "Capital Offense," with Leslie Nielsen and Coleen Miller Oavid Friedkin, director.

• RUSSELL HARLAN, ASC, "Something of Value," shooting in Africa, with Rock Hudson and Dana Wynter Richard Brooks, director.

• PAUL VOGEL, ASC, "The Wings of Eagles," with John Wayne, Dan Ouley and Maureen O'Hara. John Ford, director

• F. A. YOUNG, ASC, "The Little Hut," CinemaScope and Color, with Ava Gardner and Stewart Granger. Mark Robson, director

MOTION PICTURE CENTER

• NICK MUSURACA, ASC, "The Line Up," TV, (Desilu Prod.) with Warren Andersen. H Marse, director

• HAOOLO WELLMAN, ASC, "Wyatt Earp," TV, (Desilu Prods.) with Hugh O'Brien. Frank McDonald, director.

PARAMOUNT

• SAM LEAVITT, ASC, "Flamenco," (VistaVision and Color) (Being photographed in Spain) with Carmen Sevilla and Richard Kiley Oon Siegel, director

• RAY JUNE, ASC, "Funny Face," (Technicolor; VistaVision) with Audrey Hepburn and Fred Astaire. Stanley Donen, director.

• CHARLES LANG, ASC, "The Rainmaker," with Burt Lancaster and Katharine Hepburn. Joseph Anthony, director.

• LOYAL GRIGGS, ASC, "The Buster Keaton Story," (VistaVision & Technicolor) with Oonald O'Connor and Ann Blyth. Sidney Sheldon, director.

• HASKELL B. BOGGS, "The Jim Piersall Story," with Karl Malden and Norma Moore Robert Mulligon director

• JACK WARREN, ASC, "Beau James," VistaVision and Color, with Bob Hope and Vera Miles. Mel Shavelson, director.

REPUBLIC STUDIOS

• ED COLMAN, ASC, "Dragnet," TV, (Sherry Prods.) with Jack Webb. Jack Webb, director.

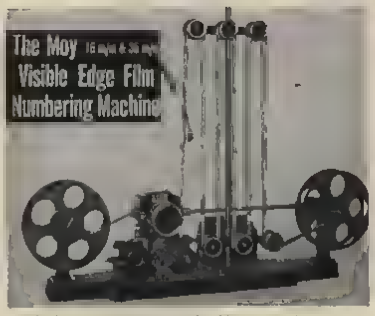
• DANIEL B. CLARK, ASC, "Do You Trust Your Wife?" TV, (Oon Fedderson Prods.) with Edgar Bergen and Charlie McCarthy Jim Morgan, director.

• BUD THACKERY, "Accused of Murder," Truecolor and Naturama, with David Brian and Vera Ralston. Joe Kane, producer director.

(Continued on Page 498)

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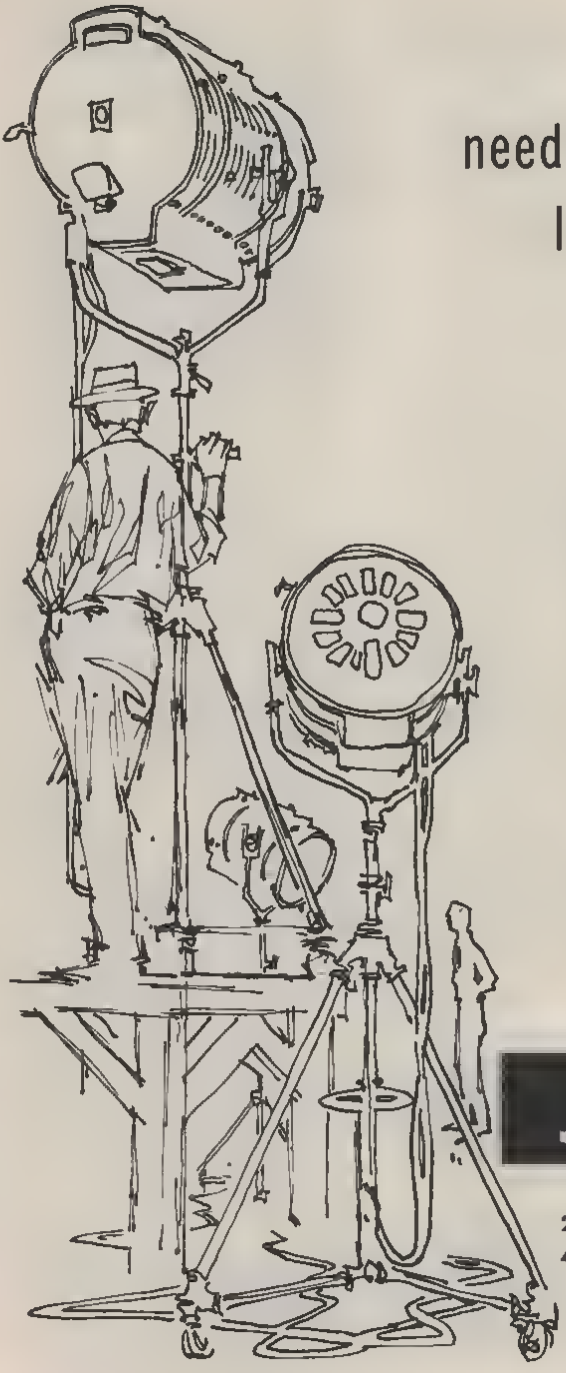
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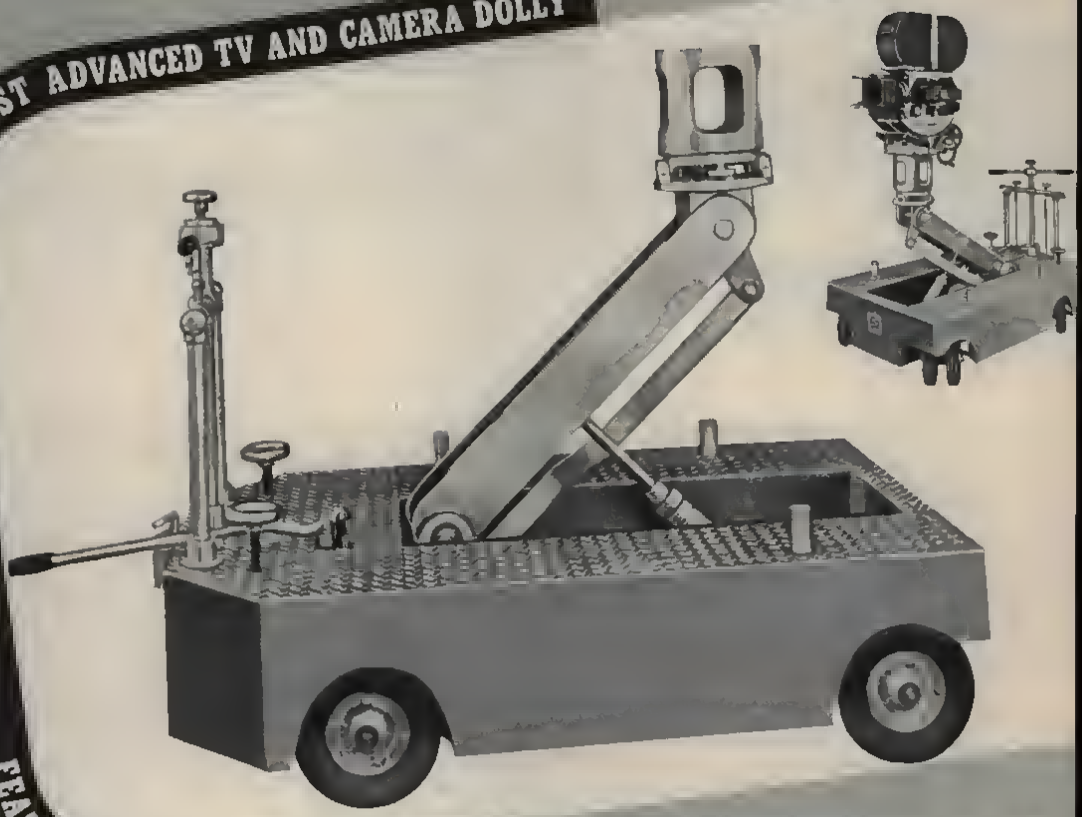
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LINING UP THE TAKE—While the players stage a rehearsal of a shooting scene, the camera on a boom is maneuvered to capture the action to best advantage.



THIS IS THE TAKE—The camera was pulled back, the boom lowered and the action caught at its dramatic best from low angle. Afterwards, camera was raised and a medium closeup made of victim's reaction.

STARTING THE NEW ASSIGNMENT

By WALTER STRENGE, A.S.C.

FOREWORD—How does a Director of Photography start a new assignment? What preparation, if any, takes place before the camera starts rolling on the first scene? We believe our readers will be interested in a cameraman's first-hand account of this procedure so we have asked cinematographer Walter Strenge A.S.C. to recount something of the procedure he followed in preparing for and photographing 'Stagecoach To Fury"—which, incidentally, is the first feature film to be made in CinemaScope and the new Eastman Plus-X negative. Produced by Regal Films, Inc., it will be released soon by Twentieth Century-Fox Studio.

—*EDITOR*

THE FREELANCE cinematographer — that is, the cameraman who is not on contract with a major Hollywood studio —works mostly for the independent film producers. His assignments very often involve a great deal more responsibility in the way of pre-production planning. This advance preparation is vital to the success of his photographic assignment: the independent producer doesn't have the studio equipment and all the other production resources that the contract cameraman has access to whenever things go wrong and he needs an assist. So it is very important that the cameraman who undertakes an independent assignment take every possible precaution to insure that he has a dependable and efficient crew, that ample equipment is brought along on locations, and that there is complete and amicable agreement between himself and the producer and the director.



WALTER STRENGE, A.S.C., who directed the photography of "Stagecoach To Fury," determines the correct exposure for filming actress Mari Blanchard, using an incident light meter.

My assignment to direct the photography of "Stagecoach To Fury" began with a telephone call one morning. It was Screen Director William Claxton checking to see if I was now on a picture. "Would I be interested in shooting 'Stagecoach To Fury'?" Then he gave me the producer's phone number to call. An appointment was arranged for the morning of June 11th. At that time we discussed the picture and reached an agreement, which included amount of salary, how my screen credit was to appear, and the size of the crew I should have to work with me.

As it was up to me to pick my crew, and this detail had to be attended to at once, I went on salary on June 13th—three days after my interview with the producer. With a starting date for the picture set for June 20th, this meant that crew members accepting commitments to work on the picture would have to make themselves available on that date, which was a week later. But when you have a group of men who usually work with you all the time and who like you, invariably they are willing to wait.

As this was to be the first feature production ever to be photographed in CinemaScope and the new Eastman Plus-X negative, and because I had never before photographed a picture with a CinemaScope lens, I had to do some checking before the day came to start the picture. We had arranged to lease a CinemaScope lens from 20th Century-Fox studio, so it was logical that I should make an appointment with that studio's camera department head, Sol Halprin, A.S.C., for the purpose of getting a quick rundown on use of the lens, etc. It was Halprin who, together with Earl Sponable, had developed and improved the CinemaScope lens.

Following this, I visited a local camera rental service and arranged to lease a Mitchell BNC camera and tripod for the production. I had them set up the camera and put on the CinemaScope lens and make a test. This was immediately taken to a laboratory for development and the results showed that the lens and camera equipment checked out perfectly. Now all there remained to do was arrange for renting such other items of equipment as camera car for location shots, a boom for use on the stage, etc., and we were all set to start shooting.

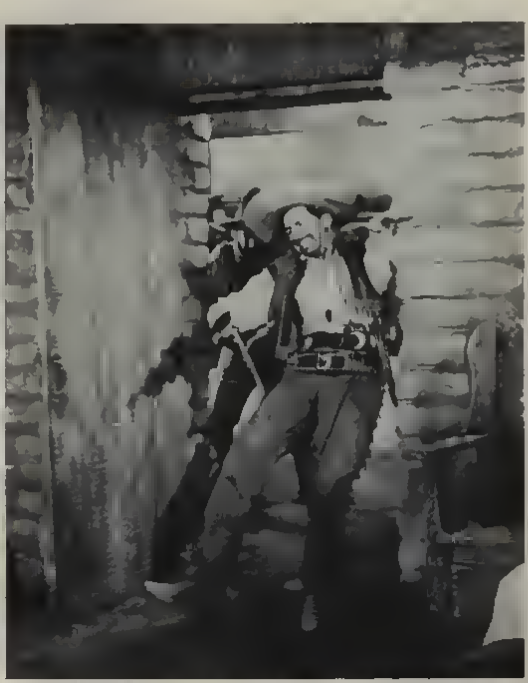
The following Sunday I joined director William Claxton, his assistant, Mack Wright, and production manager Ian McDonald and flew to Las Vegas. From there we proceeded by automobile to Kanab, Utah—a 200-mile trip that required 7½ hours to drive. Kanab and the surrounding countryside is famous for furnishing locations for western movies. The following morning we arose early and started out by automobile in search of locations for scenes for "Stagecoach To Fury." Taking a dusty, winding dirt road, we found what we were looking for about 45 miles from Kanab. It was well worth the trip. The country is similar to Monument Valley, dotted with majestic buttes and odd rock formations. For bringing us to this little photographed area we were indebted to Fay Hamblin, who acted as guide and who owns a piece of the country himself—about 26 square miles of it.

Concluding our location-hunting journey, we traveled back to Parry's Lodge—our headquarters in Kanab. Here we showered, rested a bit, had a delicious dinner, and then retired, planning an early start for the location area the next morning.

Following the initial look at the locations, director Claxton now began visualizing the shots. So we spent the entire day on this phase of the planning. We surveyed each location site from all angles to determine the best composition with respect to the action involved, all the time, of course, considering the angle of the sunlight. We had every

(Continued on Page 493)





TWO ACTION STILLS from Regal Films' "Stagecoach to Fury," which illustrate besides the tense, dramatic action the good lighting of interiors and players. In keeping with the high action the lighting is relatively high key, with just enough delicate shading at the perimiter to enhance the pictorial composition of the scenes.—All stills are by Cliff King

Harnessing Sunlight With Reflectors

Reflectors both supplant and augment the booster light in smoothing out the shadows in outdoor photography.

By ARTHUR ROWAN



A SMALL, hand-held reflector is used to cast fill-light on Glenn Ford as a unique angle shot is filmed from overhead for M-G-M's "The Fastest Gun Alive"

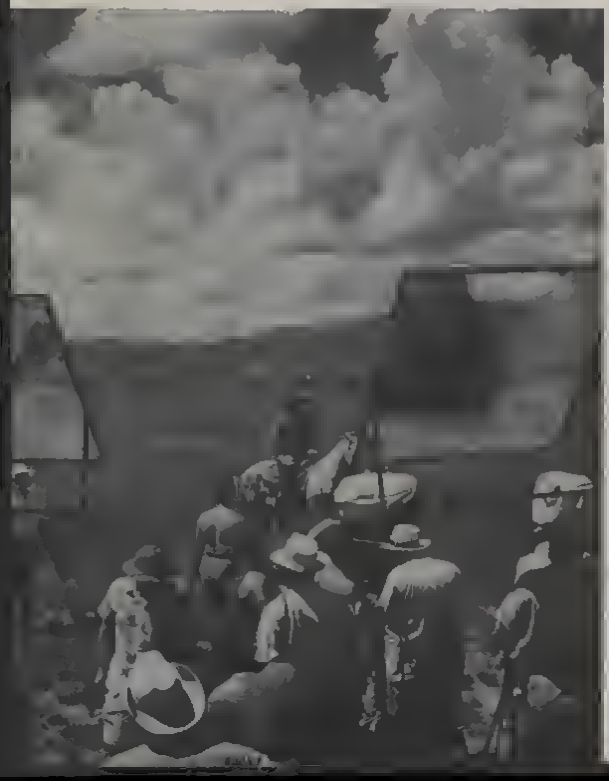
THE SUNLIGHT REFLECTOR, which became an important adjunct to outdoor photography in the early days of motion pictures, still remains an important tool for motion picture production. Its function is to redirect some of the sunlight into shadow areas of exterior sets or on subjects when photographed out-of-doors.

While the arc and incandescent booster lamp have supplanted the reflector to some extent, it often is impractical or too costly to employ the booster light, especially on distant locations. And so the inexpensive, portable, and easy-to-use reflector finds frequent use in modern-day production. Attesting to this are the photos reproduced on these pages, which show how reflectors have been used in a number of ways in recent productions.

While all reflectors are basically the same—a flat surface coated with a reflective material—they vary in design, construction and mounting according to the studio. Many years ago, most reflectors were made to fold in the middle and had reflective coating on one side only. Today, most of the reflectors we see in use by the studios consist of a single panel, about 4 feet square. The panel is generally ¼" or 3/16" plywood with a thin supporting framework around it to give rigidity and has fittings enabling it to be mounted on a tripod designed for the purpose. A good closeup view of a typical reflector and stand is afforded in the photo at bottom of this page.

Reflectors are made in three grades or reflective qualities: soft, medium and hard. One coated with flat white paint is called a *soft* reflector. Glossy white enamel paint or aluminum paint is used for a *medium* reflector, while the *hard* reflector—the one that finds the greatest use—is coated with sheet foil or silver or aluminum leaf. The hard reflector is the one that is used in great numbers on distant locations because its hard, brilliant surface projects light great distances. In the middle photo on page 475 may be seen how a battery of these reflectors set side by side provided the fill light necessary to photograph a scene in a shady bend in a mountain stream for a recent Hollywood production. Here *hard*-surfaced reflectors were used to obtain the maximum projection of reflected light.

(Continued on Page 503)



REFLECTORS are invariably used when shooting on distant locations where it is impractical to use booster lights. Construction details of typical studio reflectors and stands may be seen in photo. Reflectors are coated on both sides, are angled with respect to sun to direct light to best advantage for the cinematographer.



HERE A REFLECTOR is mounted on a separate dolly that precedes the camera and directs fill light on two players riding alongside dolly tracks (far side) and being photographed in closeup for C. V. Whitney Pictures' "The Searchers." Two grips hold reflector at proper angle for desired lighting effect



NINE REFLECTORS arranged in a row provide the fill light necessary to photograph a scene in a shady bend in a mountain stream for Bryna Productions' "The Indian Fighter"

SHOOTING INTO THE SUN requires ample protection for the camera lens in the form of a sunshade and fill or booster light to provide image contrast. Here solid panel reflectors are used to redirect sunlight into a scene shot against the sun





BECAUSE reflectors are cheaper and easier to handle, they are often used in place of booster lights in shooting street scenes like the one above for 20th Century-Fox's "The Snake Pit"



OLD—In the days of silent movie making on location, the cameras were mounted on wooden parallels of questionable sturdiness. If camera height had to be changed, it could only be done by adjusting length of the tripod legs.



NEW—To shoot a similar scene today, the camera is moved to the site on a modern carrier such as the "Blue Goose." The camera platform is readily raised or lowered by hydraulic pressure. Running shots can also be made with the equipment.

Location Camera Carriers

By FREDERICK FOSTER

ECONOMICAL LOCATION production has long been dependent upon ability of the crew to get the camera into position and ready to shoot in the shortest possible time.

Before advent of the giant boom and camera cars with hydraulic hoists, location shooting involved time consuming erection of parallels, and when the setups were in rugged, mountainous country, transporting camera and equipment to the location site was often difficult and hazardous.

The solution to the problem was achieved when studios decided to put the camera on a rugged mobile carrier that would not only transport camera and equipment from studio to location site, but provide a suitable mounting for the camera while shooting was in progress and incorporate some of the



THE "Blue Goose"—first practical all-purpose location camera carrier with hydraulic lift and four-wheel drive—aids Nat Holt Productions shoot exteriors for a "Western."



WARNER BROTHERS answer to the "Blue Goose" is this 4-wheel-drive camera and equipment carrier with hydraulic hoist affording wide range of camera heights.



UNIVERSAL-INTERNATIONAL's location camera car and equipment transport. Camera platform is hydraulically operated and the mast is equipped with hydraulic stabilizers.



OLD—Above scene is typical of many location shooting assignments which required erection of wooden parallel for the camera, not to mention cost of moving in the lumber and the men to build it. Here a scene for a Tom Mix feature is about to be filmed.



NEW—To shoot scenes in rugged country similar to the location pictured at left, the modern-day producer utilizes one of the giant Chapman Booms. One may be seen in this photo projecting into the scene from the left and shooting action staged below.

conveniences of the camera boom used on the sound stage.

The first attempt in this direction was when a studio loaded its biggest camera boom on a truck and sent it out to a rugged western location. It afforded some mobility, eliminated the need for erecting parallels, and provided for using the camera in a wide range of

(Continued on Page 495)



FILM PRODUUCTION Unit of Douglas Aircraft Company, Santa Monica, designed this equipment carrier that accommodates all the equipment shown, including camera tripod and dolly. All "elevated" shooting on location is done from top deck of truck





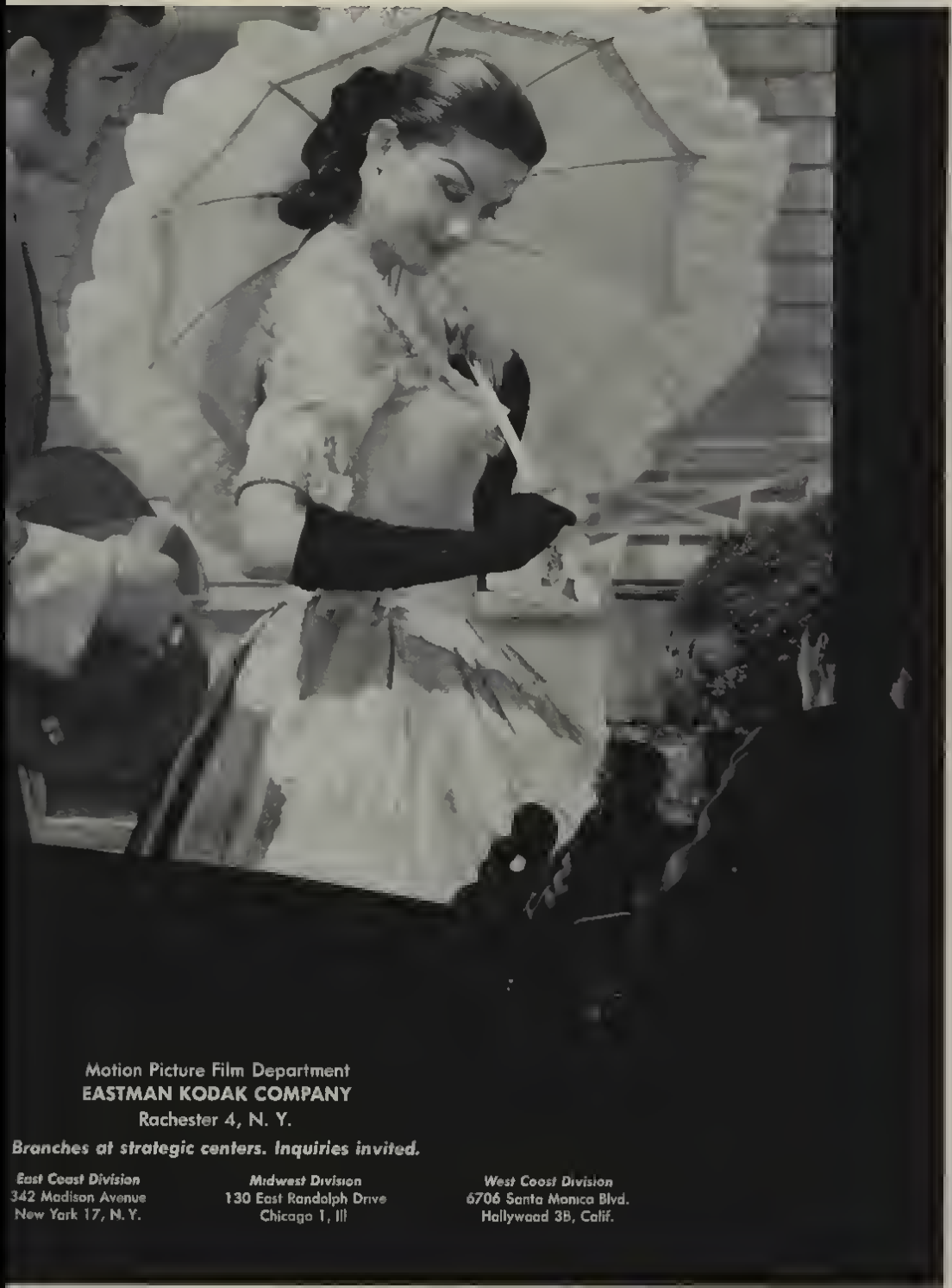
TWO VIEWS of the Chapman heavy-duty camera boom designed for rugged location use. It affords range of camera heights from ground level to 30 feet, will go anywhere a Jeep can go.



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How Movie Falls Are Staged And Filmed

Illusion achieved through use of right lenses and camera angles.



ALMOST EVERY "western" movie has a chase scene that culminates in a two-man duel in which the one receiving the fatal bullet goes to his death in a plunge over a cliff. In above shot gunman peers cautiously over cliff toward adversary.



AS BULLETS WHIZZ overhead, he ducks, then inches forward for a better view so he can return the shot. This photo and one at left were made on location atop a rocky mountain. Climax of sequence will be staged and filmed on a prop rock back at studio.



COUP DE GRAS. Enemy's bullets have found their mark and gunman starts topple from top of rock. Actual height of rock is concealed from audience by shooting in close and excluding extraneous features that would reveal real height.



CULMINATION OF FALL is filmed on "prop" rock on studio back lot with camera in reverse position. Concluding shot of sequence will be filmed on location with a "dummy" hurtling through space from top of real cliff, and landing finally at the base.

THERE'S A LIMIT to the chances that Hollywood's famous stuntmen will take when doubling for the stars in dangerous action. So when the script calls for the hero—or the villian—to plunge from a cliff as, for example, to climax a gun duel, the art of illusion is brought into play and the actual plunge is *implied* through skillful photography.

The photos above illustrate a rather simple instance of this kind. The scene involves a gunman in a duel with another in what appears a mountainous locale. Height of the rock on which he crouches has been suggested by a low-angle shot that begins the sequence. His subsequent action was filmed close up to retain the illusion of height and to build up suspense.

In the first photo, he peers cautiously over rim of the rock towards his adversary, at the same time inching forward in order to get him in his sights. In the next photo he is seen suddenly hugging the rock as his adversary's bullets whizz overhead. In the third photo, another bullet has found its mark and the gunman slumps forward and starts

(Continued on Page 502)

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GATHERING exposure data during the shooting of an industrial film for the American Society of Tool Engineers Exposition in Chicago by James Mitchell Associates, using the new high-speed Anscochrome color film. Left to right are producer Mitchell, cameraman Dick Wiacek, and Ansco representative Bill Metzger

Shooting An Industrial With Ansco's New, Fast Color Film

New Anscochrome produces excellent results recording low-key interiors with exposures based on ASA roting of 125.

By JIM MITCHELL

James Mitchell Associates, Detroit, Mich

BREATHES THERE an industrial film producer who has not cringed at the familiar statement: "Now, then, we want it in color but we have got to keep the budget down."

Recently this happened to us, and in usual fashion we hedged and gave the client the stock answers about shooting color Well, it was fortunate for us that they would not accept the statement "it can't be done"

The determined client was the American Society of Tool Engineers Every two years this Society sponsors an Industrial Tooling Exposition in major cities throughout the U. S.—big shows, drawing 35,000 to 40,000 of the nation's top production and manufacturing executives and engineers.

The recent show in Chicago was the largest yet with 530 exhibits covering seven and one half acres of floor space in the International Amphitheatre Products shown ranged all the way from small hand tools, jigs and assembly devices to huge stamping presses and precision machine tools. In between were all the related products coolants, electronic controls, materials handling equipment, precision control and inspection equipment, etc

ASTE's problem was how to record this event on film with maximum impact at least cost. It was their original intention to have produced only enough film of this exhibit to provide a maximum of five minutes screen time in a 27 minute color motion picture. In effect, they wanted to have their cake and eat it, too, because along with the cost problems, the footage we shot had to provide a good color match with the rest of their film

These people are engineers and to them "anything is possible" They had heard about some color film that was pushed to ASA 125. Yes, the Ansco people had an outdoor film that had enjoyed some success at this speed, but this was outdoor film and to use it indoors would mean filtering and this might cancel out the high speed rating and all its advantages. In addition, we had not seen the area that we were to shoot, and with budget limitation and the nature of the job, we "had to shoot with existing light" Indoor shots with existing light? Impossible!

At this point, we began to take stock of ourselves Who were we to say that it was out of the question? So—it was only logical that we turn to Ansco, the people that were doing revolutionary things with 16mm color film A call to the Binghamton office put us in touch with Ed Stambolian We were assured that we could convert the outdoor to indoor, but why do that? He then went on to explain that they were releasing a new indoor film that could be pushed to ASA 125 Had it been used commercially? No—we would be the first to use it for an industrial film Could they send us a hundred feet so that we could run a test on it?

"Sure thing—I'll send it out today."

I went back to the Tool Engineers and told them that we were having some new film shipped to us and that we would run a test on it. We had never shot any color this fast, and frankly, we were quite dubious. Fortunately there was a Travel Show in progress, and so we could come close to approximating the conditions we would face in shooting the show in Chicago

Dick Wiacek was the cameraman on this job. In shooting the test footage, we were concerned with only one question—Can it be pushed to 125, and what will it look like?

All we did was take a light reading and shoot In one spot and strictly for

a gag, we shot footage of a film showing. Then the big wait for the results. The ASTE staff thought the test was terrific! The footage of the movies was even quite satisfactory.

So—we were commissioned to film the Tool Show. Ansco sent Bill Metzger to Chicago to work with us. Arrangements were made for special processing, which allowed us to see the rushes late that day.

The response of the ASTE Officers and its National Public Relations committe was most enthusiastic. Of course, there were a couple of perfectionists who were comparing the finished product to the best of Technicolor. True there was some graininess in the film, but under the circumstances, it was not objectionable, and the color was exceptionally good. Proof of the enthusiasm for the footage was manifested in an expansion of the original film production plans into a fifteen minute picture that would be shown to 135 chapters of the Society.

So much for the basic story. But what about the technical side? Though we didn't know the conditions under which we would be shooting, we did know that in order to do the job we would have to shoot with existing light and crowd the film to the limits every foot of the way. On this job we used the Bell & Howell 70-DL camera because of its portability. In addition, it gave us a shutter speed of 1/40th of a second at 24 frames. This gave us the extra exposure we needed. We also used the new B & H f/.95 lens. There were times when it came in handy. For determining exposures, we used the Norwood Director meter.

In taking light readings we would take a general overall reading because of the spottiness of display lighting. In compensating we would go ¼ to ½ stop under for light areas, and for dark areas, we would go ¼ to ½ stop over.

The latitude of the Ansco stock gave us good color rendition in areas where the ratio was as high as 6/1 or 7/1. Resolution, latitude and the tremendous depth of the film amazed us. In a situation such as we were in, one runs into seemingly impossible conditions, for there were extreme variations in lighting. At times we had readings of only four foot candles, and so were pressed to get the limits of the film. On-the-spot calculations indicated that such shots were nearly impossible . . . but ASTE wanted it.

In getting such shots, the action in the film had to appear normal. To do this, we dropped the camera speed to 20 frames. With the B & H this gave us a shutter speed of one thirty-fifth and, in turn, allowed us more exposure time — approximately ¼ stop more. This, coupled with the f/.95 lens gave us optimum results under seemingly impossible light conditions. Results were satisfactory. We must add, though, that under these conditions, the color would drop off to the red, but was none-the-less acceptable for our purposes.

In using the new Ansco color film,

(Continued on Page 492)



THE Mitchell production was essentially a factual account of the ASTE's 1956 exposition and contained many shots such as the one above. Not only did the color hold up in shots such as this, says Mitchell, but they demonstrated the film's excellent resolving qualities.



SHOTS OF conferences, most of which were filmed in a lower key of light, "pushed" the new Anscochrome film to its outside limits, says producer Mitchell.



SHOOTING A SCENE enroute to summit of Mt Washington is CBS Special Assignment Crew headed by author Irving Heitzner, at camera controls. Others in photo, from left to right, are soundman Addison Tice, commentator Robert Northshield, and film editor John Dullaghan.



ON THE SUMMIT, wind velocity reached 75 miles per hour. Here it was necessary for cameraman Heitzner to crawl on his hands and knees and shoot with an Eyemo camera.

Odyssey Of A Roving TV Cameraman

Quest for footage for CBS' "Oddities In The News" has its climax on blizzard-swept mountain top.

By IRVING HEITZNER

MOST YOUNG FELLOWS WITH a yen to become a motion picture cameraman invariably think of working behind a Mitchell camera on the sound stages of the major studios in Hollywood. But not all the film exposed daily in motion picture cameras originates in the glamorous atmosphere of the movie studios.

Now that television has become the formidable entertainment medium that it is, a considerable portion of daily TV programming originates on film. Besides the hour and half hour shows that originate on film in studios in Hollywood and New York, still other programs, like CBS' "Oddities In The News" are made up from factual material shot by roving cinematographers—like myself. In this type of work, stamina, resourcefulness and quick thinking are valuable assets.

This became all the more apparent to me as I reflected on a recent assignment for Columbia Broadcasting Company to shoot material for its "Oddities In The News" series—an assignment that was to take me to the summit of blizzard swept Mt. Washington in the White Mountains of New England. Here, because weather conditions in winter months approximate those of the Arctic, the U. S. Air Force has established a proving ground where are tested some of its most important aeronautical instruments and equipment. The United States Weather Bureau has also established a station there, and WMTM-TV has its TV transmitter there. All these factors had an important bearing on my film assignment.

On the morning of February 1, 1956, I gathered together my crew and associates consisting of sound man Addison Tice, news analyst Robert Northshield, and film editor John Dullaghan, and prepared for the ascent. Our equipment consisted of one sound camera with amplifier, and a hand camera with a battery pack having ample power to operate it in exposing 10,000 feet of negative. In addition, there was the personal baggage of the party.

After reporting to Capt. John Hancock, USAF, in his office at the foot of the peak, we received such items of Arctic clothing as parkas, heavy woolen mittens, and sun visors. This, along with

(Continued on Page 500)



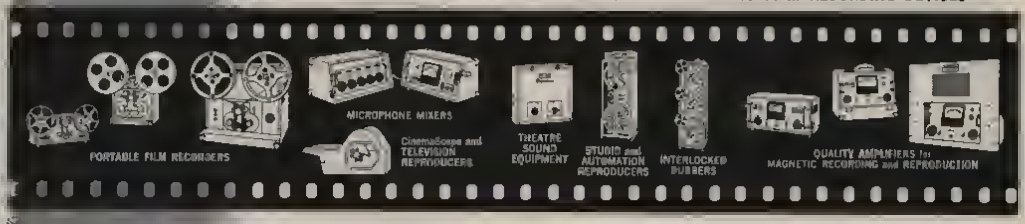
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3-Perforation Film Frame Spacing Proposed

"Fromelines" between imoges ore getting wider, due to develoopment of wide-screen aspect ratios, resulting in wasted film stock and decreosed projector efficiency

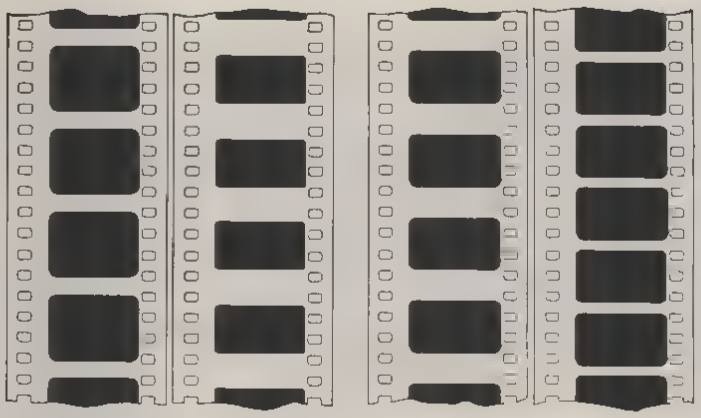


FIG 1—Comparative "fromeline" spacing of standard and wide-screen film images is illustrated above. The author proposes reducing the "fromeline" areas by employing a 3-perforation instead of conventional 4-perforation pulldown intermittent and re-positioning of the frames on release prints.

FOREWORD—Robert A Mitchell, writing in the July, 1956 issue of *International Projectionist* ("A Common Sense Approach to Screens, Apertures and Aspect Ratios"), has pointed out the percentage of wasted film in every 1000 feet that goes through a projector, due to the space unused between wide-screen images He suggests that print economies can be effected and efficiency of screen projection increased by making prints with the images closer together and employing an intermittent pulldown of 3, instead of the standard 4, perforations per frame of film. Part II of his article dealing specifically with this subject is reprinted here by special permission of the publisher of *International Projectionist*.

—EDITOR

THE SILENT-FILM camera aperture was sufficiently large (0.97" x 0.72") to allow for small differences in framing and for slight misalignment of the projector lateral guide rollers The sound-film camera aperture was also standardized at slightly over-size dimensions (0.87" x 0.64") for the same reason

Now, the standard frame-shift performed by the intermittent mechanism of a 35mm motion-picture camera or projector involves a longitudinal distance of ¾ inch, or, as 35mm film is perforated, a distance of 4 sprocket holes along each edge of the film

With the vertical dimension of the silent camera aperture, the thickness of the "framelines" between the individual frames was only 0.75 − 0.72 = 0.03 of an inch, hence practically all of the picture area of the film was utilized in silent-picture photography It is otherwise in the case of sound-movie photography. In order to maintain the desired 4:3 proportionality of the frame images, the framelines necessarily became rather thick (specifically, 0.75 − 0.64 = 0.11 inch).

The loss of picture space in standard sound films is by no means serious, even though it represents a waste of 110 feet of film in every 1,000-foot reel —110 feet which must uselessly be pulled down by the camera intermittent without being exposed The loss is slightly greater in projection, of course because the projector aperture is slightly smaller than the camera aperture. In a aspect ratio soundfilm aperture, 150 feet of film out of every 1,000 feet is never projected to the screen.

When non-anamorphic wide-screen apertures are used in the projector, the waste of footage—film which must uselessly be pulled down by the intermittent assumes alarming proportions In every 1,000 feet, for example, the following footages of film are wasted by the various non-anamorphic apertures

ASPECT RATIO	WASTED FOOTAGE IN 1,000 FEET
1.375/1	150
1.65/1	250
1.66/1	253
1.75/1	279
1.85/1	304
2/1	338

Figure 1 shows what portion of the picture area of the film is actually projected upon the screen when 1.375/1, 1.85/1, and 1.66/1 aspect apertures are employed

The trend toward wider screen images, as we said before, is not wholly unattended by unfavorable consequences For musical extravaganzas and "spectacular" productions involving vast throngs of people and panoramic scenery, the extreme CinemaScope aspect ratios serve admirably. Yet what a pity it would be if *all* movies were CinemaScope spectaculars!

The dramatic motion picture is intrinsically *emotional*; and emotion implies an intimacy of thought and feeling translated into photographic proximity to the individual actors, either singly or in small groups. The closeup shot, as well as the "roving" camera and "rapid" cutting by the film editor, is part and

parcel of movie making technique, and always will be.

It is desirable, therefore, that a compromise be effected for the best presentation of non-anamorphic films. CinemaScope is excellent in its own field, and its extreme aspect ratios should be utilized, wherever possible, for full panoramic scope. But the more *sensitive* dramatic photoplay is still best presented in less extreme aspect ratios, and, we may add, in monochrome instead of color. In expressing these views, the writer is merely echoing the opinions of many highranking movie producers who are increasingly reverting to the wider *dramatic* scope of the conventional aspect ratio and more or less ignoring the wider *visual* scope of the panoramic screen.

If the old conventional aspect ratios of 1.333/1 and 1.375/1 are considered a bit too restricted as regards the horizontal dimension, then certainly the 1.65/1 and 1.66/1 ratios represent the maximum (and perhaps the most desirable) width-to-height ratio that preserves the "fluidity" of screen drama—the use of closeups intercut into medium shots, "dollying" of the camera, etc. And yet these aspect ratios are wide enough to enhance the visual grandeur of panoramic long shots.

This writer definitely agrees with those motion-picture producers who advocate standardization of the 1.65/1 a.r. in the interests of pictorial framing. But universal exclusive use of the 1.65/1 ratio for regular, non-anamorphic prints gives rise to technical problems of film waste due to overly thick framelines, overworked projector intermittents, heating of the film by the arc lamp, and the number of frames per second needed to provide smooth, flicker-free projection at the highest light levels. As previously stated, the conventional 1.375/1 a.r. results in a waste, due to frameline thickness, of 15% of the total length of the film, while the 1.65/1 a.r. wastes fully 25%.

The waste of film footage caused by the unused frameline areas is reduced in CinemaScope projection by the comparatively large apertures. CinemaScope framelines, being relatively thin, result in only 3.5% of unshown film length. The larger picture areas of CinemaScope films increase image definition and improve the focusing characteristics (depth) of the projection lens.

By employing an intermittent pulldown of 3, instead of the standard 4, perforations per frame of film, the resulting filmshift distance of 9/16 inch (0.5625") is enough to accommodate the 1.65/1 a.r. projector aperture (0.825" x 0.500") and permit the use of a necessarily larger camera, or printer, aperture (proposed dimensions: 0.87" x 0.55"). These dimensions result in an unused film-length in the camera of only 1.25%, and in the projector of only 6.25%. These figures compare favorably with the unused-length percentages in silent-film standardization, namely, 3% in the camera, 7.05% in the projector.

Figure 1 is a side-by-side visual comparison of standard non-anamorphic release print and the proposed "3-hole" release print intended to be shown in aspect ratios of 1.65/1 and greater. Note that the 1.65/1 (or 1.66/1) a.r. projector aperture now in use for 4-hole film is to be used for 3-hole film. *The picture area is NOT reduced by reducing the thickness of the framelines!*

A number of projection technologists have advocated the 3-hole frame shift for 35mm film. There is nothing new in the proposal. It is worthy of serious consideration, however, first because of the necessity to restandardize the a.r. of normal-film projection, and secondly because the 3-hole pulldown offers several distinct advantages in addition to utilization of practically all of the picture area of the film.

There are 16 frames per foot on standard 4-hole film. On 3-hole film there are 21⅓ frames per foot, or 64 frames per 3 feet. If the present 24 frames per-second rate of exposure is kept, 3-hole film will travel only ¾ as fast as 4-hole film, with a running time per reel 1⅓ times that of present film. Instead of 1½ feet per second (90 feet per minute), the travel rate of 4-hole film, the 24 frame/sec 3-hole film will run at the rate of 1⅛ feet per second, 67½ feet per minute).

If, on the other hand, the linear running rate and showing time per reel is preserved in 3-hole film, the frame rate will be increased from 24 to 32 frames per second. The more rapid frame rate will result in a field rate on the screen of 64 exposures per second when regular 2-cutoff projector shutters are used. Projected pictures are virtually flickerless, regardless of light level, at 64 exposures per second.

Yet another alternative exists, and one which is apt to be of greater interest to television engineers than to theatre-movie technologists. "If the frame rate of professional film is increased," argue the TV people, "it should be changed to 30 frames per second, the exact submultiple of the American TV field rate of 60 interlaced scannings per second."

Let's see how the 30 frame/sec. rate affects running time and film consumption in the case of 3-hole film. It will change the travel rate from the present 1½ ft./sec. (90 ft./min.) to 1¹¹⁄₁₆ ft./sec. (84⅜ feet/min.). Therefore, 30 frame/sec. 3-hole film will run ¹⁵⁄₁₆ as fast as 24 frame/sec. 4-hole film, and the running time per reel will be 1-1/15 that of present film.

The principal disadvantage of 3-hole film standardization is the non-interchangeability with present-day 4-hole CinemaScope prints. The anamorphic process could be readily adapted to 3-hole film, however; and by utilizing the whole 0.825" x 0.500" projector aperture and an anamorphic expansion factor of 1½, very high quality images in an aspect ratio of 2.475/1 would be obtained. (As an alternative, and with a slight sacrifice of picture quality and brightness, two 0.1-inch strips could be subtracted from the frame width for 3-channel stereophonic sound, leaving a projector aperture measuring 0.625" x

(Continued on Page 496)

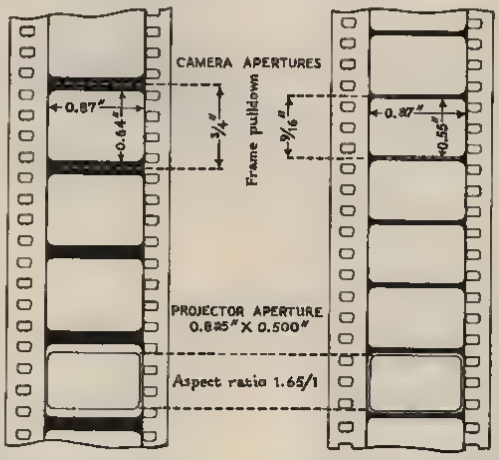


FIG 2—Printing differences in 4-hole and 3-hole frame placement. Note that the same 1.66/1 (or 1.65/1) aspect ratio wide-screen aperture is used with both kinds of projection prints. Higher aspect ratios may, of course, be used with the 3-hole frame shift.

Directing The Inexperienced Cast

The success of an amateur phataplay depends as much an capable acting as on the phatography. Here's how to get professionol results when employing amateur ployers in your movies.

By HAROLD BENSON

ONE OF THE greatest advantages the the professional director has over his amateur counterpart is his trained and well-paid cast. The amateur knows the results he wants, but if he tried to get them by keeping his heroine kneeling for hours on a stone floor like Dryer, or bullying his actors as mercilessly as von Stroheim, he would soon find himself without a cast at all.

His players are almost always friends, neighbors and relatives who have volunteered their services. They're usually happy enough to act for the simple pleasure of seeing themselves on the screen. Most amateur directors tend to accept any standard of performance in their delight at finding people prepared to take part—though there are a few who conceal their gratitude so thoroughly that they're apt to antagonize the cast before they even begin to shoot.

How can a director avoid these dangers? Awkwardness, camera consciousness, the devasting smile or giggle at the wrong moment—these are the problems which make every cine amateur at some time swear to take up another hobby. Luckily the mood passes; but the difficulties remain.

The best time to explain to actors that the director has to be and is going to be the boss is at the very beginning. Casting is nearly always a matter of listing acquaintances physically suited for each role, and working through the list until someone agrees. This is not only the moment to relieve yourself of all your gratitude and thanks, but also to warn the person that he or she will be expected to act under orders.

Insure, gently but firmly, that all your players understand that you're the person with the final say if there should be any differences of opinion. Of course, once they've agreed to kow-tow, it's up to you to prove that you know what you're doing. Any dithering or uncertainty leads, as often as not, to that humiliating situation in which the director, dubious about a certain effect, asks an actor for his advice and is immediately met with, "How should I know? *You're* the director!" This is hardly likely to result in amicable relationships among the unit, or a good film.

At the same time, don't let your cast feel that there's no scope for their own brainwaves. Tell them at the outset that you'll welcome their suggestions throughout the production. Even if they come up with hopelessly impracticable ideas that only show they don't know a meter from a tripod, always thank them and explain *why* their schemes won't work.

It's astonishing how often an enthusiastic cast will offer really useful and original notions. One of my favorite shots in my first comedy was suggested by a twelve-year old Cockney kid. I was shooting scenes of a group of panic-stricken Boy Scouts fleeing from the path of a speeding cyclist when this



ALTHOUGH Harry Ruffner and his wife, Lee, used all non-professionals in their prize-winning 16mm film, "In The Heart of a Man" they achieved a professional quality in the production through forthright direction of their players. The Ruffners are members of the Westwood Camera Club, San Francisco, Calif.

youngster said, "'Ere, mister, wot abaht me little bruver? 'E can't arf shin up a lamp-post!" Surprisingly enough, his brother, though too young for the Scouts really could climb a lamp-post like a monkey. I dressed him in uniform and shot him at 8 f.p.s. as he went up, and got a perfect climax for my sequence.

But however helpful your players are, they are the ones who need assistance, especially if they're facing the camera for the first time. A nervous director makes a nervous cast. Aim at being constantly authoritative in your manner—but never lapse into uncongeniality.

The script is always a problem when dealing with amateur actors. Only you can decide, according to your circumstances, whether you will get the best results by explaining the whole shooting script shot by shot (which often worries the cast), by letting them see only a synopsis (which often strikes them as rather vague), or by merely telling them exactly what to do without explaining how their part will fit in the finished production (which invariably baffles them completely).

Personally I feel that the more important a role, the more important it is that the actor should understand the script. I always go over the whole thing with the principal members of the cast, but I don't usually bother to describe more than the relevant sequences to those taking the smallest parts.

One weakness common to all inexperienced actors is the almost irresistable desire to glance at the camera. Perhaps they expect to be able to see the film rolling past the other side of the lens. The best cure is to show them the camera before you begin shooting, and to give a broad explanation of it to anyone interested. When you've finished, ask them if they've seen enough of the camera. If they agree that they have, tell them that it's just as well, because they're not to look at it again under any circumstances. Then explain why.

You'll be surprised how effective such an apparently fatuous build-up proves. A straight plea is all too quickly forgotten; but a simple little demonstration like this seems to stick in the memory.

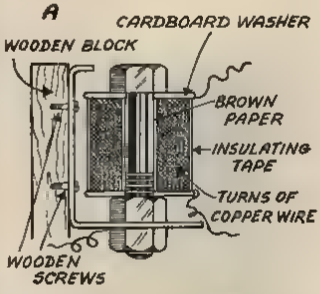
Always encourage your cast to underplay rather than over-play. For one thing, you'll find few of them realize how close to the audience the camera brings them, and thus tend to overact in any case. For another it's a fortunate fact that an audience will "see" an appropriate expression on a face that's actually expressionless. (You may have heard the true story of the director who intercut identical C.U.s of a famous actor with shots of a bowl of soup, a child and a coffin—and the critics raved about the subtlety with which the actor showed hunger, tenderness and grief.)

(Continued on Page 499)

A "Do-it-yourself" Remote Control For Cine Cameras

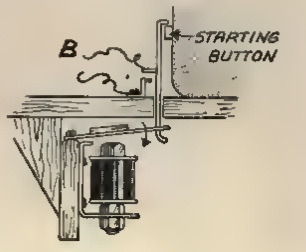
How a discarded doorbell magnet can be used to operate your camera from a distance for nature photography, stop-motion, or animation.

THE CONVENIENCE of starting and stopping the camera by remote control is virtually essential to photographing wildlife, animated action or subjects in "stop-motion." While there are a number of devices now on the market for this purpose that are readily adaptable to most of the popular cine cameras, the ingenious cinefilmer can easily rig up an effective electrical control in the "do-it-yourself" manner in vogue today.



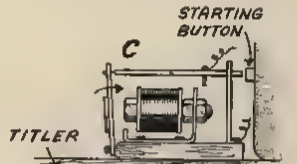
Such a device is shown in the accompanying illustrations, and it may be used with a wide range of 8mm and 16mm cameras. It operates on the order of a solenoid in that a charge of electric current passing through the winding of a magnet activates a lever that contacts the camera starting button on impulse.

For the do-it-yourself builder the essential item to start with is a small electric magnet which may be removed from a discarded doorbell. Where a more powerful magnet is required to actuate the camera starting button, the reader can build a magnet of the required size and power, following the details given here and illustrated in Fig. A.



Two heavy washers 1⅛" in diameter cut from cardboard are fitted on an iron bolt. The bolt should be wrapped with several turns of brown paper, then wound with enameled or cotton-covered wire of approximately 32 gauge. Before starting the winding, punch a small hole in one of the cardboard discs and insert end of the wire through it to form one of the electrical leads. Proceed to wind the wire around the iron-bolt core until it fills the spool to the edge of the cardboard discs. Through another hole pierced in the same cardboard disc, insert the end of the wire, which will serve as the second electrical connection for the magnet.

Where a magnet from a doorbell is used, it may be powered by two or three standard dry cells, or from a conventional doorbell power transformer. Where the camera requires greater thrust of the remote control to actuate the release button, then power from an automobile storage battery is recommended.



After the magnet is mounted on a base or framework, as illustrated, the next step is to attach the lever that is activated by the magnetic impulse. This is a narrow strip of steel reinforced at point of contact with the magnet with a "button" or disc cut from the same metal. This strip should be hinged and swing free. The simplest manner for achieving this is simply to drill a hole in one end and drive a small nail through it to secure it to the base—but without driving the nail in altogether.

Figs. B and C show application of the magnet in operating two types of camera starting buttons—the pull-down type and

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Lighting For Mood In The Motion Picture

Before you con begin to light your scenes, you must know the mood of the story you ore obout to film.

By SAL PIZZO

BEFORE BEGINNING this discussion on lighting, I wisb to state that my wife, Nadine, and I work as a team, combining our individual experience in theater and painting in order to reach a fuller understanding of tbe motion picture medium We do not consider ourselves authorities on lighting, but rather as serious students of lighting What we know we have learned the hard way—by trial and error The lighting techniques employed in the production of our three films, "The Nativity," "The Fall Of The House Of Usher" and "Elvra," resulted from a great deal of experimentation—and a strong desire to create mood with light.

Lighting, to us, does not mean the flooding of a set with sufficient illumination to enable one to shoot at a certain F/ stop. It means the kind of lighting that will create atmosphere and add reality to a story. Unfortunately, the amateur filmer has been duped by some advertisers into believing that two lights on a camera bar is the answer to all his lighting problems Some books on amateur movie-making also strongly advocate the use of flat or front illumination for shooting color film. My wife and I dared to question these statements. We proved to our satisfaction that the amateur *can* achieve interesting lighting in his movies, and that he can do it without the benefit of expensive professional equipment

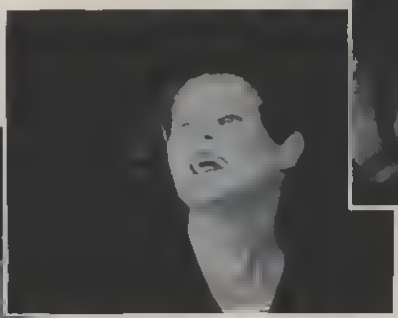
Let us consider for a moment the equipment necessary to produce good lighting for our movies. In the professional studios one finds a multitude of different kinds of lights, stands, reflectors, scrims, booms and dozens of other items that few of us even knew existed. We shall not concern ourselves with the fancy professional equipment, but consider only the basic tools that may be found in the average amateur filmer's closet: a few photofloods, several photo spots and perhaps some medium beams Add to these a couple of light stands, 3 or 4 clamps, plenty of cord and a few spare fuses, and you have the essential tools To these you may add as many accesories as your budget will allow

Before you can begin to light a movie, you must know the mood of the story you are about to film. The type of lighting required for a comedy, for instance, would be entirely different than that for, let us say, a psychological tragedy The mood of your story will dictate the key of your lighting. Since my wife and I are intensely interested in low key, dramatic illumination, and since we have used it with some degree of success, it is that type of mood lighting which I will discuss.

Let us assume now that we are about to film a scene in a tragedy The set is dressed. The actors are in their places Every last detail in costume and make up bas been checked The script calls for a two shot in which one character speaks a line that has such a terrifying effect upon the other that he shrinks away as though suddenly confronted with a monster

Suppose that you throw enough general illumination on the set to enable you to film the scene at, let us say, F/4, and you shoot it that way. Your results will be very unsatisfactory. Oh, you will bave a picture all right. Granted that your focus is razor sharp, your exposure "right on the button," and your actor







FRAME ENLARGEMENTS of three scenes from auther's 16mm color film "Elvra," which illustrate painstaking lighting technique—unusual in amateur film productions. Photos at left and right are of auiher, who played part in "Elvra" together with his wife, Nadine, center.

highly satisfactory; yet the final result will probably evoke nothing but mild interest from your audience. Your scene has plenty of illumination, but lacks creative mood lighting. Your scene has sharp pictures, but no soul.

Now let us re-film this action, only this time with a thoughtful attempt at dramatic illumination. First we must locate the visible sources of light on the set. These consist of two candles on opposite sides of the room—one toward the back, and one up front. Now we will try to simulate the candle light by placing our light units in such a way that the illuminated areas will appear to be receiving their light from the candles themselves. Objects close to the source of light will be brilliantly lit, while those farther away will recede into shadow. It is advisable to have the actors walk through the action while you study the changing light patterns that fall upon them.

At this point we notice that when an actor stands at the rear of the set, facing the camera, he receives strong side light on his right side with resultant bold shadows on his left. As he walks forward he will go out of range of the lighting on his right and step into the area of simulated candle light on his left. Thus, the light pattern on the figure has been completely and logically reversed, giving the scene heightened dramatic interest.

But we are not finished yet. We noticed that when the actor's right side was well illuminated his left side was in deep shadow. Obviously, some fill light is necessary. Further light manipulation reveals that a lamp trained on his left side from a high angle and slightly behind him will not only render the shadow areas more transparent, but also throw some interesting highlights on his hair. This procedure is followed with every section of the set until the desired atmosphere has been created.

Before shooting the scene we have another rehearsal of the action to get the over-all effect of the lighting. Now we notice with satisfaction that the movements of the actors are being constantly dramatized by the lighting. The dusky areas create just the air of mystery desired for this scene. The set assumes the three-dimensional reality that is so important in maintaining dramatic empathy.

Although lighting plays such an important part in creating the proper mood for your story, it must never be made to dominate the action. Its function is to heighten the drama and to enhance the scene both pictorially and emotionally.

When lighting for mood in a motion picture, we need not depend entirely upon illumination from visible light sources. Some very striking effects can



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be achieved with light coming through a window or an open doorway. These invisible sources afford a wonderful opportunity to experiment with colored gelatins. The light coming through the window can be changed from sunlight to moonlight merely by using a different gelatin in front of the lamp.

Often the shadow patterns cast by unseen objects can create an illusion of authenticity difficult to produce in any other way. The atmosphere of a prison cell, for example, can be achieved by projecting the shadow of the barred window upon the bare wall behind the prisoner. This can be done very simply by placing a small cardboard cut-out of the windows in front of the light, then directing the light to be desired area in your composition.

Much has been written about the importance of the closeup in the motion picture. I will not add to that except to say that it presents a most challenging opportunity to the cinematographer who wishes to experiment with lighting. As a rule, the lighting set-ups used to film the long shot will not be suitable for the closeup. Closeups require lighting set-ups of their own. Here again we have found the colored gelatin an invaluable accessory in heightening mood and characterization. Not only can we give a face more dramatic power by controlling the chiaroscuro patterns, but we can also alter the colors at will. Let me illustrate:

At one point during the production of "Usher," the script called for the ghostly figure of a woman to open a door and step into a candle-lit chamber. The light and dark patterns on her face were easy enough to achieve by placing a light almost at her feet, but screened from the camera by a wall. The strong shadows and sharp highlights from this low-angle lighting gave the girl a weird appearance, but not until a blue gelatin was placed in front of the light did we realize the ghostly effect that the scene demanded.

These gelatins that play such an important part in creative lighting for color cinematography are very easy to obtain. Colored cellophane is both inexpensive and effective. It is easily handled when cut and mounted in cardboard frames.

The lighting in a motion picture should be as carefully planned as the shooting script itself. Unfortunately, it is the one department most often neglected by amateur movie-makers. When shooting outdoors, one may occasionally stumble upon an excellent "ready-made" mood shot. But indoors the filmer has to create the effect himself. That requires planning and hard work. Many times you may work for 45 minutes lighting a scene that may require only 5 seconds to shoot.

In lighting a scene, it is well to keep in mind that the color film most of us use does not have much latitude. Many amateurs have had the experience of shooting a scene that looked just right to the naked eye, only to discover later that in the processed film the shadows were too dark or the light areas burned out. Our method is first to light a scene so that it looks right to the naked eye. We then check it very carefully through a Spectra Color Contrast Viewing Glass. This handy little tool looks very much like a neutral density filter with a short handle. When viewing a scene through this glass you will see it approximately as the film will record it. In other words, if the dark side of a green chair looks black when viewed through the spectra, it will undoubtedly come out black on your film. If you wish the green to register on the film the light on the dark side of the chair must be increased until the green becomes visible through the spectra. If you don't have a Spectra, you can attain much the same result by studying your set through tightly squinted eyes.

Lighting for the motion picture is often a laborious, and always a painstaking endeavor. It is also an exacting and expressive art. The motion picture is more than a logical succession of photographed pictures in motion; it is an eloquent form of theater. Therefore, illumination for this medium is not only a functional device for defining pictures for the eye of the camera, but an indispensable creative element for evoking mood and heightening emotion in this essentially dramatic art.

ANSCO'S NEW COLOR FILM

(Continued from Page 483)

we did not make any attempt to use CC filters. In most instances we were forced to crowd the film to its limits and to cope with a filter factor would not have been feasible because we would have defeated our objective of gaining all the speed the film afforded. As we pointed out before, the color held up exceptionally well.

Of course, shooting original is one thing, but the big question of what would happen in printing was still unanswered. The original footage was exceptional, so—with some misgivings, we sent it off for printing. Suffice it to say the first answer print was more than satisfactory.

In this day of tight budgets and the inevitable swing to color, it is our feeling that Ansco has made a real contribution with its new high-speed color film. At this stage the versatility and latitude of the new Anscochrome will more than negate any shortcomings.

Here is a color film that will permit 16mm color production with a minimum of lighting. For example, our experience has show that a few 500 watt clip-ons placed judiciously in a factory scene will, in addition to the existing light, provide adequate illumination for Anscochrome.

STARTING THE NEW ASSIGNMENT

(Continued from Page 473)

shot pretty well lined up on paper by the time we started back to Kanab in mid-afternoon.

When we arrived back at the Lodge, my assistant, Paul Cable, had arrived along with the camera and grip equipment and the camera car. The rest of the company and crew was scheduled to leave Los Angeles by plane the following morning, to be on hand at 9 A.M. ready to start the picture.

In the meantime, other equipment was arriving from Hollywood, including a horse truck with six horses, a stage coach, and another truck loaded with props, reflectors, wardrobe and all the personal baggage which did not accompany those who traveled by plane. Among the rolling stock, there was also a completely equipped dark room on wheels.

The following morning at nine we had all our equipment on hand; the camera was loaded and ready to work, and we looked forward to our three-day schedule of shooting exteriors with no anxiety whatever until one delay after another prevented us from getting the first take on film until after lunch. This meant that our three-day schedule was now reduced to two-and-a-half days —and that we would have to cut corners and make up for lost time.

Our work at Kanab began right on Page One of the script. Scene 1 was described as follows:

"*Exterior, Countryside. Day.* Med. shot, horses' legs. The camera sees only the legs of five horses that stand on a hill that overlooks the countryside. The camera tilts back abruptly and we see the five men that sit astride the animals. They appear to be watching something o. s. Lorenzo Garcia sits on the center horse. Lorenzo suddenly wheels his horse about, his men following suit. They gallop down hill, the camera panning with them. Camera then pans the countryside, showing a road, and bringing into view a fast-moving stagecoach."

The site for this shot was one of the more difficult to locate because of the varied action and the unusual scope of camera coverage called for in a single, continuous take. The camera began by



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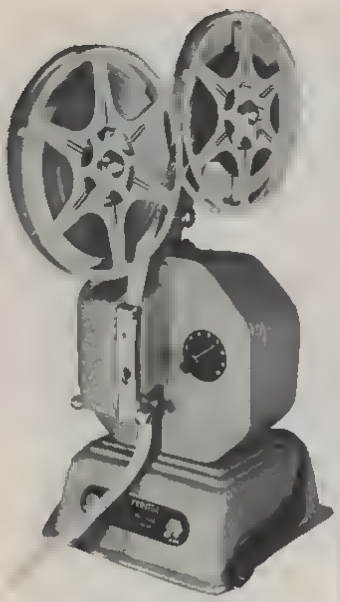
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focusing on just the legs of the group of horses, then tilted up to show the riders astride the horses, then followed the riders as they galloped away down hill. The reason for such a lengthy continuous shot is that it was used both to introduce the story theme and to provide a backdrop for the main title, which was optically superimposed over the latter part of the scene — a technique growing in popularity among Hollywood film producers.

Because the story involved the holdup of a gold laden stagecoach, a high percentage of the story's exteriors centered around this activity and were filmed in the Kanab region. As with the scene No. 1 described above, each scene and setup in the script was carefully detailed in advance with respect to photography during our first and second days' visit to the location area. By the time we were ready to bring our camera into play, I had developed a mental picture of the action and photographic requirements of each scene as it related to the story as a whole. This is very important to the cameraman who desires something more in his cinematography than mere, mechanical photographic recording, and the only way he can achieve it is to have an active part in the pre-production planning as I did with this picture. The two days that I spent scouting locations with director Bill Claxton led directly to a better photographic job and to getting scenes "in the can" within the scheduled time.

The studio phase of the production began on the following Monday. One major set had been erected. It was called a "relay station," a structure common in remote regions of the West during stagecoach days, where the coaches stopped to afford relief to passengers and where fresh horses were acquired for the ensuing phase of the coach's journey. Adjoining the "relay station" were several smaller buildings and backdropping the scene was a painted backing representing a mountain vista. We worked hard from Monday to Friday to wind up our shooting here, then on the following Monday we traveled to the Gene Autrey ranch for more location exteriors. The sun failed to come out all day; because budget productions never wait for sunshine, we readily adjusted to the situation and photographed the remaining scenes of the picture in the diffused but adequate light that prevailed, finally winding up the last take at 5 P.M.

Because so much of our shooting was on location, I had no opportunity to view the daily rushes, but I was provided with light test strips which, after you are in this business long enough, will give an adequate check on what results you are getting.

And the photographic results we achieved with the new Plus X negative I think are terrific. Because of the film's extremely fine grain, it is ideally suited to production in CinemaScope, which involves super enlargement of the image on the screen. It is likely that this new film will lead to more and more black-and white productions being filmed in CinemaScope.

An interesting sidelight to this budget production is the fact that no sound was recorded during the shooting of location scenes in Kanab. Where dialogue was important, the necessary action was shot in closeup on the sound stage back at the studio, and the scenes intercut where required. Otherwise, all necessary sound effects compatible with the action staged on location was post-recorded and dubbed-in in the final phases of completing the production.

"STAGECOACH TO FURY"

(In black and white and CinemaScope)
Produced by Regal Films, Inc.

Producer	Earle Lyon
Director	William Claxton
Prod. Mgr.	Ian MacDonald
Asst. Director	Mack Wright
Art Director	Ernest Fegte
Dir. of Photography	Walter Strenge, ASC
Operator	Keith Smith
Assistant Cameraman	Paul Cable
Assistant Cameraman	Jim Williamson
Assistant Cameraman	Harry Young
Still Photographer	Cliff Kling
Grip	Fred Williams
Gaffer	Bob Jones
Property Master	Jock Liehgold

The Players

Forrest Tucker
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Paul Fix
Wallace Ford

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LOCATION CAMERA CARRIERS

(Continued from Page 477)

positions through the facilities of the boom. However, there was still room for improvement.

Development of the Jeep and the fork-lift truck led indirectly to building the first practical location camera transport now popularly known as the "Blue Goose." Grip Howard Cooley, who worked mostly with Technicolor camera crews years ago, figured there must be an easier way to handle the cumbersome Technicolor camera on location than by the methods then in use. He decided to do something about it and set to work designing a carrier that would be powerful enough to move over the roughest of location terrain. It also had to provide a substantial camera support that could be elevated easily to afford a reasonable range of camera positions. The first "Blue Goose" was completed and patented in 1950. Basic structure was a Dodge four-wheel-drive truck with a hydraulic lift mounted on the front with a platform for the camera. Since then, five such transports have been built by Cooley. The latest model provides all the necessary equipment for limited production on location—camera and accessories, sound recording equipment, and grip equipment. The units are available to the various Hollywood studios on rental. The most experienced operators are now doing limited running shots and semi-boom shots with the "Blue Goose."

Another grip, whose name is forgotten, is responsible for dubbing the vehicle "Blue Goose." It was a habit of his to sing on location and one song had to do with a bluee goose. Observing Cooley's vehicle waddling up over a hill one day, he mentioned that it moved "just like a blue goose," and the name has stuck ever since.

As production equipment is developed and its value proven in use, it has been the practice of the major studios in Hollywood to copy the idea and build their own—usually with the consent of the "copyright owners." Recently, Warner Brothers' studio built a carrier similar to the "Blue Goose," except that it provides more storage space for essential location production equipment. The vehicle itself is four-wheel drive and there is the usual hydraulic lift with camera platform mounted on the front end. (See center photo, bottom page 476.)

One of the things that carriers such as these did for the production companies was to eliminate the need for erecting camera parallels on location. Economies have been effected in that it is now rarely necessary to ship the lumber for parallels to location and

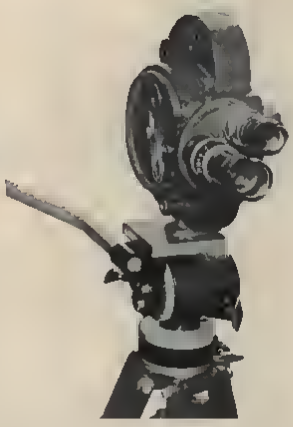
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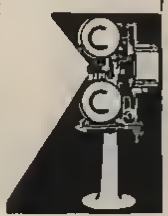
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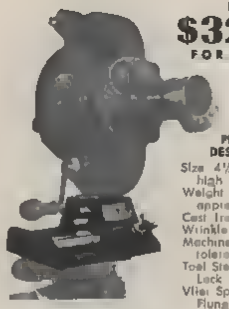
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send a staff of carpenters and grips to assemble them. The hydraulic lift has replaced all this, except where the camera must be set up at very great heights.

The latest studio to build its own camera and location truck is Universal-International. Designed by Grip Department head Virgil Summers, U-I's transport is reportedly an improvement on the "Blue Goose" and the Warner Brothers' carrier in that it employs hydraulic stabilizers for the hydraulic lift supporting the camera platform, and provides specially designed compartments for essential grip equipment, magnetic film recording apparatus, also a hydraulic tail-gate that simplifies the task of loading into the vehicle the small gas-powered generator which is used to provide power for fill lights.

Extending the range of usefulness of the carrier is the innovation of having the hydraulic mast in a flexible mount so that it may be tilted forward or backward to provide a level platform for the camera when the truck comes to rest on an incline, as in rocky, mountainous areas.

Industrial film units have been quick to adopt the mobile production transport idea developed by the major studios. Film production in the aviation industry today demands the same equipment and facilities that the Hollywood studios have found important to speedy and economical film making. This led the Motion Picture Division of Douglas Aircraft Company, at Santa Monica, California, to design a mobile carrier adequate for its needs when shooting in the field. All the equipment necessary for full-scale film production by Douglas is transported to locations in a specially designed motor van that provides ready accessibility to any item of production equipment, be it lamp, parallel or dolly. Through skillful design of the interior, accommodations have been provided for a tremendous array of production equipment ranging from a camera dolly to some two-dozen incandescent set-lighting lamps of assorted sizes. Unlike the units described earlier, the Douglas vehicle does not provide a hydraulic lift and camera platform. Instead, and because most of the shots made above tripod height are at one level, a sturdy deck for the cameras is mounted on roof of the truck, with a collapsible guard rail of iron running around it.

In recent years the giant camera boom has come into use in shooting on rugged locations. Like the camera cars with hydraulic lifts, units such as the popular Chapman booms will travel anywhere an Army Jeep or four-wheel-drive truck will go. They offer the added advantage of the long and flexible boom enabling the camera to be used at ground level or as high as thirty feet.

Twenty-five years ago, when a film company traveled to a distant outdoor location, lack of modern equipment such as is available today restricted a cameraman in the photographic treatment he could give a picture. Today, anything is possible on location that can be done with a camera on the sound stage—thanks to the versatile location camera carriers.

3-PERFORATION FILM FRAME PROPOSED

(Continued from Page 487)

0.500", which, with an anamorphic expansion factor of 2, would result in a 2.5/ a.r. picture.)

Retention of the 24-frame/sec. rate is favored for 3-hole film prints. The advantages of this standard rate are fivefold: (1) Studio camera apparatus need not be altered. (2) Old pictures may be reshown in theatres by merely reprinting the 4-hole picture negatives at 1.65/1 a.r. on 3-hole master positives and re-recording the 90 ft./min. sound masters at 67½ ft./min. (3) A 1⅓ increase in running time and saving of film and raw-stock costs. (4) Larger useful film life, less wear on hard-working projector intermittents, and less film noise in the projection room. (5) Film can be shown on TV by the present-day 2-3-2 method of pulldown timing.

The single disadvantage of 24 frame/sec. 3-hole film is the effect of the lower linear rate on sound reproduction. Unless the scanning beam of recording apparatus be narrowed to ¾ of its present width, the highest frequency recordable in optical sound will be reduced from 12,000 cycles to 9,000 cycles. This difficulty is easily overcome, and as far as projector soundheads are concerned, it will be necessary only to restore the old 1-mil scanning beam standard (specifically 0.9375 mil instead of the present 1.25 mil). The lower film speed will compensate for the increase in ground noise due to emulsion grains.

A slight attenuation in the high-frequency range, however, is not serious. In fact, attenuation of the 1,000—10,000 cycle range by the speaker system is always appreciable, and in most cases desirable even when the optical-track soundheads reproduce frequencies as high as 10,000-12,000 cycles. Too high a "top-cut" increases ground noise.

Even 16mm sound film running at 0.4 the speed of standard 35mm film is quite capable of providing satisfac-

tory sound up to about 8,000 cycles at ordinary levels of volume.

As for the more rapid frame rates proposed for 3-hole film, their advantages lie chiefly in the direction of flickerless pictures and less heating of the emulsion by the arc-lamp beam. In fact, 48 frames-per-second prints made from 24 frame/sec. negatives might be very serviceable in drive-in theatres to prevent blistering of the emulsion.

The changes needed in 35mm projection equipment for running 3-hole film are not extensive. Old-style projectors can "get by" with nothing more than a substitution of 12-tooth sprockets for the regular 16-tooth sprockets (with corresponding readjustment of the pad rollers and gate-door intermittent-sprocket shoe); but this simple method should not be considered as a permanent expedient. Film-wrap around 12-tooth sprockets is not entirely satisfactory.

The ideal conversion of a projector to 3-hole film involves the substitution of a suitably geared intermittent movement employing an 18-tooth sprocket (six 3-hole frames per revolution) and reduction of a motor-soundhead drive gearing to ¾ of the present standard RPM to allow use of present sprockets in mechanism and soundhead. The problem is a simple one from the point of view of the mechanical engineer. END

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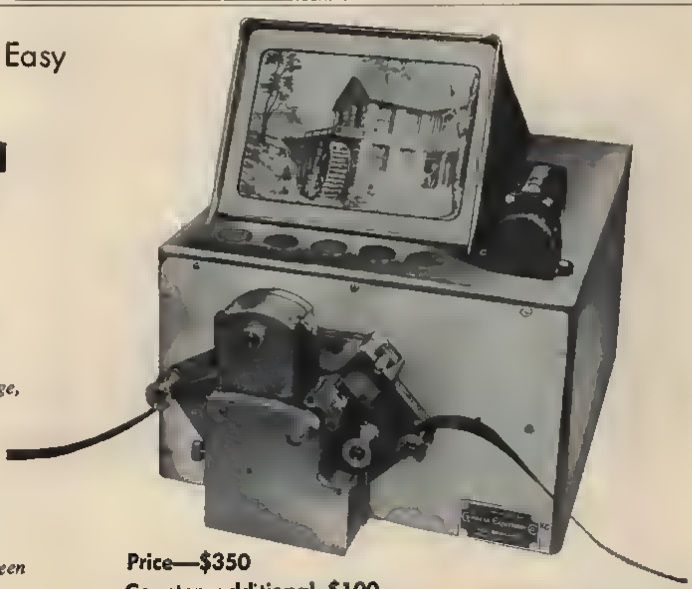
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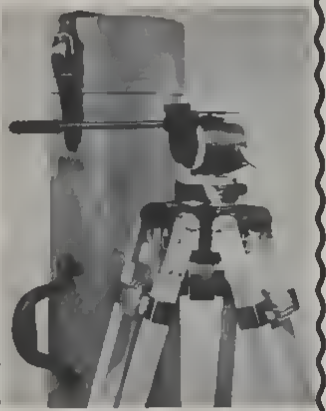
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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 469)

• JOHN MACBURNIE, ASC, "The Jane Wyman Show," TV Don Weis, director "Soldier of Fortune," TV, Revue Prods., Richard Irving, director

• REGGIE LANNING "G.E Theatre," TV, Revue Prods James Nilsen, director, "Alfred Hitchcock Presents," TV James Nilsen, director

• WILLIAM SICKNER ASC, "Studio 57," TV John Brahm, director

• HERB KIRKPATRICK, "GE Theatre," TV. Hershel Daugherty, director

• JOHN RUSSELL, ASC, Gulf Oil Commercial, TV Bud Springsteen, director

HAL ROACH STUDIOS

• JACK MACKENZIE, ASC, "Code 3," TV. Various directors

• EDWARD FITZGERALD, ASC, "The Charlie Farrell Show," TV, with Charles Farrell. Ralph Murphy, director

• PAUL IVANO, "Stories of John Nesbitt," TV. with John Nesbitt Various directors

• LOTHROP WORTH, ASC, "The Gale Storm Show" TV, with Gale Storm and ZaSu Pitts. Various directors

RKO

• JOSEPH BIROC, ASC, "Run of the Arrow," (Eastman Color, Wide screen) (shooting at St George, Utah) with Rod Steiger and Sarita Montiel. Samuel Fuller, producer director

• WILLIAM SNYDER, ASC, "Bundle of Joy," (Eastman color; wide-screen) with Eddie Fisher and Debbie Reynolds. Norman Taurog, director.

• WILLIAM SKALL, ASC, "The Day They Gave Babies Away," (Eastman Color, Wide-screen) with Glynis Johns and Cameron Mitchell Allen Reisner, director.

• RONFAT PLANCK, ASC, "The Young Stranger" with James MacArthur and Kim Hunter John Frankenheimer, director

• LUCIEN BALLARD, ASC, "I Married a Woman" with George Gobel and Diana Dors Hal Kanter, director

• MOE HARTZBAND, "Brave Tomorrow," Galahad Prod., shooting in N Y., with John Beal and Augusta Dabney John Newland, director

RKO PATHE

• GEORGE DISKANT, ASC, "Hey Jeannie," Jeannie Prods., with Jeannie Carson and Allen Jenkins Les Goodwin, director; Zane Grey Theatre, Four Star Prods TV. Various directors

20TH CENTURY FOX

• LEO TOVER, ASC, "Between Heaven and Hell," (Technicolor; CinemaScope) with Robert Wagner and Terry Moore. Richard Fleischer, director.

• JOE MACDONALD, ASC, "Teenage Rebel," (DeLuxe Color CinemaScope) with Ginger Rogers and Michael Rennie. Edmund Goulding, director.

• JACK HILDYARD, "Anastasia," (Deluxe color, CinemaScope) (shooting in London) with Ingrid Bergman and Yul Brynner Anatole Litvak, director

UNIVERSAL - INTERNATIONAL

• CLIFFORD STINE, ASC, "The Incredible Shrinking Man," with Grant Williams and Randy Stuart. Jack Arnold, director

• RUSSEL METTY, ASC, "Mister Cory," with Tony Curtis and Martha Hyer. Blake Edwards, director.

• WILLIAM DANIELS, ASC, "Interlude," (CinemaScope Technicolor) (shooting in Munich) with John Allyson and Rossano Brazzi. Douglas Kirk, director

• MAURY GERTSMAN, ASC, DuPont commercial, TV. Wil Cowan, director, Lava Soap Commercial, TV Jack Daniels, director "The World and Little Wilbe," (Technicolor) with Maureen O'Hara and John Forsythe Jerry Hopper, director.

• CARL GUTHRIE, ASC, "Quantez," Technicolor and CinemaScope, with Fred MacMurray and Dorothy Malone Harry Keller, director

• IRVING GLASSBERG, ASC, "Joe Butterfly," CinemaScope and Technicolor, with Audie Murphy and George Nader Jesse Hibbs, director

• RUSSELL METTY, ASC, "The Eyes of Father Tomasino," CinemaScope, with Tony Curtis, Marisa Pavan and Gilbert Roland Joseph Pevney, director

• GEORGE ROBINSON, ASC, "Crazy Love," with Sal Mineo and Luanna Patten Richard Bartlett, director

• ELLIS CARTER, ASC, "The Deadly Mantis," with Craig Stevens and Alix Talton. Nathan Juran, director

• CHARLES WELBORN, Prell commercial, TV, Ford commercial, RCA commercial, TV. Jack Daniels, director

• ARTHUR FEINGEL, ASC De Soto TV commercial Will Cowan, director.

• WALTER STRENGE, ASC, Marlboro TV commercial Jack Daniels, director

WARNER BROS

• ROBERT BURKS, ASC, "The Wrong Man," (Alfred Hitchcock Prod., shooting in New York City) with Henry Fonda and Vera Miles Alfred Hitchcock, director.

• FLOYD CROSBY, ASC, "The Old Man and the Sea," (WarnerColor, wide screen) (shooting in Cuba) with Spencer Tracy Fred Zimmermann, director

• JOHN SEITZ, ASC, "Buffalo Grass," (WarnerColor) with Alan Ladd and Virginia Mayo Gordon Douglas, director.

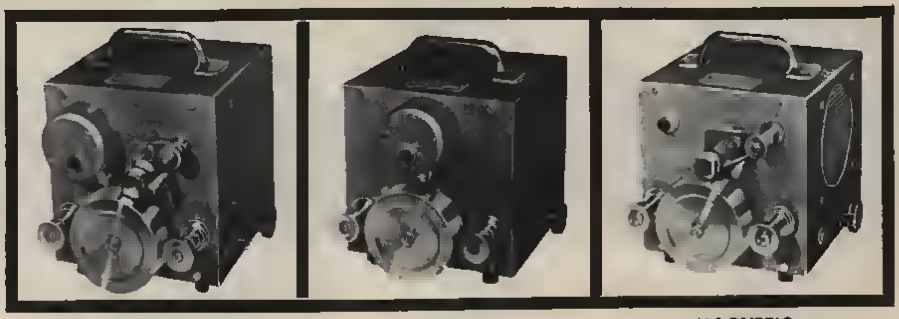
• HAROLD STINE, ASC, "Shock Wave," Warner Bros Presents TV, with Scott Brady James Kern, director "Cheyenne" Warner Bros Presents, TV, with Clint Walker Walter Doniger, director

• HAROLD ROSSON, ASC "Conflict" Warner Bros. Presents, TV, with Harry Sevmour Frederick De Cordova, director

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DIRECTING THE CAST

(Continued from Page 489)

There are sometimes occasions when you can profitably follow the example of Pudovkin, who used to "cheat" his effects with his non-professional casts. In *Storm Over Asia* he wanted a crowd to gasp in amazement at a rare fur. So he shot them watching a conjuror and got just the result he needed. He describes several examples of this practice in his famous books, "Film Acting" and "Film Technique."

It's not often, though, that we can let off fireworks under the nose of a player who we want to look startled. Usually it's a matter of demonstration, coaxing and encouragement. I have seen an amateur director of sixteen get first-class performances out of a cast twice his age by engendering their respect and wholehearted co-operation.

Go on location with a bunch of raw actors, a half-prepared synopsis and an uncertain mind and you're doomed. But confront the same cast with a firm shooting script and a determined approach, and you'll get firm and determined performances.

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ROVING TV CAMERAMAN

(Continued from Page 484)

other equipment and gear, was loaded on a large sled; this was drawn by a tractor like vehicle known as a Snow-Cat, which the television station uses to transport supplies to its transmitter personnel atop Mt Washington With my portable 35mm camera loaded and ready to shoot. I sat at the rear of the sled and made a film record of our ascent

The sky was clear and the bright sun cast interesting shadow patterns on the sparkling snow as we traveled up toward timberline At each turn in the road, we could look down upon the picture post-card scene where nestled the Chalet in which we had spent the previous night. I kept my camera busy during most of the journey through timberline and also as we emerged through a clearing.

As we approached the half-way mark —about five miles from point of embarkation—we saw heavy grey clouds gathering and floating toward us In a matter of moments we were enveloped in the clouds and I had to discontinue shooting Visibility had been reduced to ten feet Captain Hancock who had joined us at the Air Force headquarters below, said the sudden appearance of the clouds indicated a blizzard was in the making and probably would be upon us before we reached the summit

Occasionally the clouds would thin out and the sun would come through momentarily to reveal the barren terrain around us, with its odd-shaped boulders coated with a thin layer of crystal clear ice

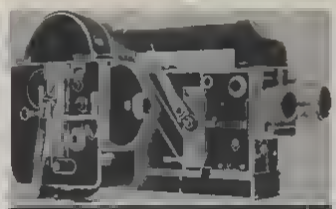
The Snow-Cat now traveled at a sharp angle as it moved along at snail's pace, as though groping for the unseen road The continued swaying reminded me of an ocean liner being buffeted by a typhoon. The crunching sound of the tractor treads biting into the icy crust concealing the road was a reassuring sound that ended almost without warning when the Snow-Cat's front end reared up suddenly and the tractor's treads began slipping on the hard packed ice. The heavily loaded sled had jackknifed and become wedged against a boulder, but at an angle that promised it would momentarily go over the mountainside. I jumped off and immediately put my camera into action, shooting furiously—ever ready to record the catastrophe should another shift of the sled send it on its way

With commendable calm, our driver remained at the Snow-Cat's controls Using the vehicle's two way radio, he called the summit personnel for assistance Another Snow-Cat was soon on the

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scene and set about righting our sled so we could get on our way again. All the time, of course, I was making a record of the activity on film.

The ominous clouds were now gathering at an accelerated pace and the wind had increased, each take now had to be shot faster and with less footage, as the sun's momentary appearance became shorter and shorter.

The rescue crew, working feverishly, soon had our sled righted and our Snow-Cat back on the road. We proceeded on toward the summit in the "Cat," leaving the sled behind to be towed by our rescuers.

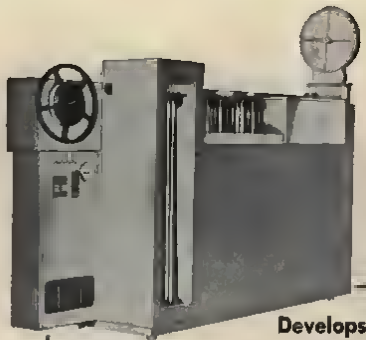
We arrived at the summit of Mt. Washington in the twilight and it seemed that we were in another world, so grotesque did the snow and ice-covered buildings appear. The wind was now blasting away at around fifty miles per hour. As we stepped out of the Snow-Cat, the driving snow struck our faces like so many needles. What little I was able to see reminded me of scenes of Admiral Byrd's expedition to the Polar regions. First to greet us were members of the engineering crew of the TV transmitter, who led us through a tunnel of ice to the building entrance.

By contrast with the frigid exterior, the interior was a virtual palace, well stocked with provisions that would enable the staff to live through the worst of blizzards. The installation had been completed one summer during a sixty-day period when snow storms and winds cease to be a problem.

My camera and sound equipment did not arrived until late that night. All the equipment cases were covered with ice and care had to be taken that no moisture formed on the lenses or otherwise damage the camera and its accessories.

Once we were safely inside the TV station headquarters, the wind velocity increased to 90 miles an hour, making exterior photography out of the question. The following two days, therefore, were spent shooting interiors. As the wind dropped to an endurable velocity of 50 miles per hour, I ventured outside with my hand camera. Earlier I had made shots of a group of men leaving the mess hall and fighting against the wind as they returned to the main building—with my camera set up behind the window of an adjoining building. I decided that closeups of these men braving the storm would enhance the dramatic impact of this sequence, so I donned my Arctic clothing and went out to take a look, with the idea of shooting these scenes when the men returned to the mess hall for their noonday meal.

As I stepped across the threshold and pulled the door shut against the terrific wind, I found that I could not keep my body in an upright position, but had to



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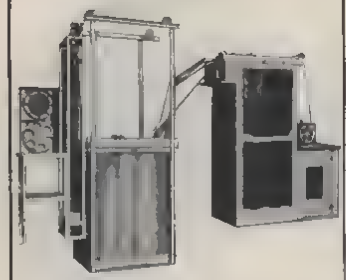
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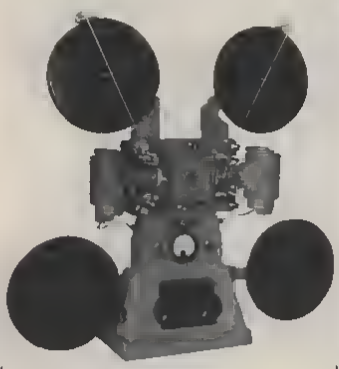
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lean forward against the wind with great effort. It was almost impossible to walk; so getting on my knees and crawling I was able to get about and size up the location for my camera setups. I also had to figure a way to use my camera in the raging storm. The snow seemed to be coming from all directions. I knew that if I took my hand camera out in such weather that within seconds the lenses would become coated with snow.

Here is where the Snow-Cat again came to my rescue. I summoned the driver and the two of us made our way to the "Cat." Inside the cab, we rigged up a length of hose from the heater and directed a stream of warm air on the windshield. In this way I was able to shoot from within the cab; there was the added advantage that I could readily be moved from one planned camera setup to another without the need of crawling through the snow on my hands and knees. This phase of my filming was the easiest of all.

Two days later the storm cleared and we started down the mountain. But bad luck dogged us and half way down a snow avalanche let loose and blocked the road. There was the usual radio call to the TV station on the summit and the other Snow-Cat was soon on the scene to aid in clearing the road.

All in all, it was fun; it was work; and it was dangerous. But it was little different from the exciting experiences that are so often encountered by the field cinematographer. We get used to such things. And I guess that's what makes the job so appealing.

HOW FALLS ARE STAGED

(Continued from Page 480)

to plunge from top of rock.

The next shot of the sequence was staged on the studio back lot, using a "prop" rock designed to match as near as possible the contour and coloring of the real rock in the mountain location. Here the camera—a three-dimension outfit—is set up in reverse position to give more dramatic emphasis to the fall by showing the gunman disappearing over the top of rock. The gunman assumes the same position he held on rock on location, as he started his fall, then on signal actually rolls from top of "prop" rock and on to heavy protective padding on ground only a few feet below.

The concluding shot of the sequence was filmed at the same location as the scenes shown in first three photos but with the camera far down the mountain and shooting up toward top of cliff. A dummy, doubling for the actor is sent hurtling off top of cliff to base below.



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REFLECTORS

(Continued from Page 474)

As several of the accompanying photos show, studio reflectors are usually mounted in a U-shaped yoke on a metal stand, and are so attached they may be tilted or rotated completely to bring the opposite side of the reflector into use. Many of the studios have coated both sides of their reflectors—one *hard* and the other *medium* or *soft*—thus providing two reflectors in one and reducing the number reflectors that must be transported to locations.

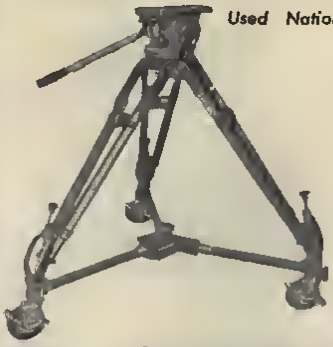
For obvious reasons reflectors are invariably set up in back or to one side of the camera to throw light into the scene from the direction most advantageous for photography. They are used at the extreme side of the camera in medium shots and closeups whenever it becomes necessary to lighten up the shadow side of faces. The fill light thus supplied never equals in intensity the sunlight falling on the opposite side of player. This would create flat, unnatural lighting.

Besides the standard 4' x 4' reflector, there are smaller ones for special uses. These are generally held in the hand by a grip or gaffer. An example is shown in the photo at top of page 474. Here an assistant holds a small reflector that throws light on actor Glenn Ford while the cameraman on boom above shoots an unusual angle shot of Ford firing a gun for Metro-Goldwyn-Mayer's "The Fastest Gun Alive."

Today, reflectors are used by every professional producer of motion pictures. The photography of industrial, training, and documentary films out-of-doors demands the same professional technique that marks our contemporary theatrical films. Many serious amateur movie makers have long been users of reflectors. They are so easy to make that they are rarely sold by movie equipment supply houses, although some are available through such channels.

Where the reflector is to be a solid panel, and not hinged in the middle to permit folding for storage, then the material to use for the panel is ¼" or 3/16" plywood. If fiber wallboard is used for reflectors of this size, it will

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have a tendency to warp and the uneven surface will not reflect light efficiently. For folding reflectors, the wallboard is satisfactory because the additional framework gives support in the middle.

The 4′ x 4′ reflector should be protected around the edges with battens or strips of moulding nailed to each side. It will be more advantageous to coat both sides of the reflector, thus giving you two reflectors in one—i.e., each having a surface of different reflective quality, as mentioned earlier.

For the average "do-it yourself" constructor, sheet foil is the easiest material to use for the *hard* surface. For a *soft* surface, use three or four coats of flat white paint. The *soft* reflector will find its greatest use when shooting close-ups, where light from a hard reflector would prove too intense for the players to face and too "hot" for good photographic rendition.

You can have one or more *medium* reflectors by coating the opposite side of a hard or soft reflector with aluminum paint, although aluminum has a tendency to become quite grey with time and thus diminish in effectiveness. The newer chrome paint is brighter and more durable, and while it is "hotter" than aluminum paint, it makes the better reflector surface.

Sometimes the *hard*, foil-covered reflector can be reduced to a *medium* re-

(Continued on Page 506)



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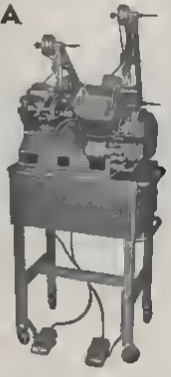
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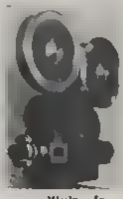
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(Continued on Next Page)

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(Continued from Preceding Page)

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REFLECTORS

(Continued from Page 504)

flector by covering it with white scrim, which will reduce the amount of light reflection. In such cases, the scrim should be tacked or otherwise securely attached to the reflector frame so that it will not be blown away by the wind.

In a recent discussion of reflectors at the American Society of Cinematographers, one prominent director of photography said:

"To get the best results with reflectors, one must train the eye to recognize when they are needed. It is not the purpose of reflectors to eliminate shadows entirely; neither is it necessary or desirable to reflect light into each and every shadow. Reflectors should be used only to eliminate those shadows in which there is detail that adds to the interest of the scene.

"It is misdirected energy to show unessential or uninteresting details No attempt should be made to illuminate the shaded side of any subject to the full brilliancy of the opposite side This would give an unnatural effect that is technically termed 'cross-lighting.' Our eyes have been accustomed to seeing objects with highlights on one side and shadows on the other. It is the relative value of light and shade that gives us the sense of depth—the third dimension. It is this effect that aids us in judging size and distance," he concluded

In addition to supplying fill light for shadow areas, reflectors are useful also as a means for supplying backlighting in exteriors. For this the *hard*-surfaced reflector should be used It should be placed at any angle to one side and back of the subject Be sure that it is far enough to one side so that no rays are reflected directly into the camera

Backlighting the head of a subject with reflected light will give a beautiful pictorial effect and cause it to stand out in relief.

Although reflectors add light to the scene or subject, it is not always necessary to increase exposure, except, perhaps, for closeups Where there is any doubt about this, your exposure meter can supply the right answer.

REMOTE CONTROL

(Continued from Page 489)

the plunger type. Used in a vertical assembly, as shown in Fig. B, it will operate such cameras as the 8mm Filmos, 8mm and 16mm Cine-Kodaks, the Victor, and others.

Used in a horizontal assembly, as shown in Fig. C, the device will operate the Keystone, Bolex, and Cine-Special cameras.—*John Forbes.*

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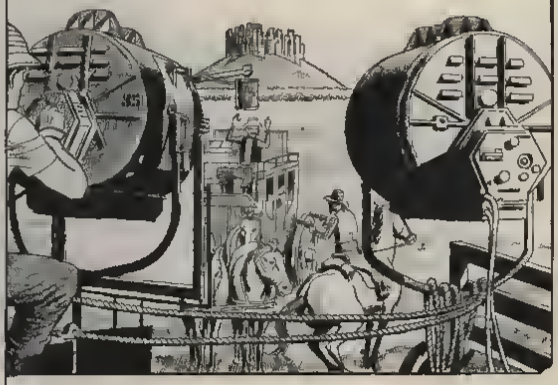
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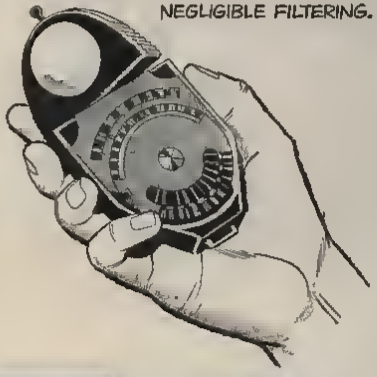
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